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ABSTRACT

The transitions students make from high school to postsecondary education represent a significant opportunity and challenge to policymakers in Alberta, Canada. This document analyzes characteristics of the 1998-1999 grade-12 cohort entering Alberta postsecondary institutions in fall 1999 using various school system data. Approximately 30% of all grade 12 students, and 38% of graduates, entered a postsecondary institution in Alberta in the fall of 1999. More than 1 in 10 students leaving school without having graduated entered Alberta's postsecondary institutions, and a larger percentage of students without diplomas were enrolled at the 4 former vocational colleges. Undergraduate degree programs were the most popular choice for grade 12 students entering postsecondary institutions. More females than males attended postsecondary institutions, and males predominated only at technical institutes and one college. The report presents information on the ages of students at the various types of colleges in Alberta and discusses the jurisdictional and geographical origin of new postsecondary students. The characteristics of delayed entry students in fall 1999 are also discussed. (Contains 7 figures and 17 tables.) (SLD)

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Post - Secondary Transitions in Alberta

Educational Outcomes of 1998/1999 Grade 12 Students

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EXECUTIVE SUMMARY

The transitions students make from high school to post-secondary education represent a significant opportunity and challenge to policy makers within Alberta Learning, since it is desirable that students make successful transitions from high school to post-secondary programs. This report is the outcome of a continued c within Alberta Learning between Information Services and the Alberta Council on Admissions and Transfer (ACAT), resulting in a rich and comprehensive analysis of the grade 12 to post-secondary transition. This document analyses and reports on the 1998/1999 grade 12 cohort entering Alberta post-secondary institutions in the fall of 1999. As with the report on the 1997/1998 grade 12 cohort, this transition study also presents characteristics of grade 12 students entering post-secondary institutions on a delayed basis in the fall of 1999.[1]

Highlights of the analysis are presented below. Details concerning the methodology and the data exchange process are described in the *Methodological Notes* section of this report.

TRANSITION INDICATORS OF THE 1998/1999 GRADE 12 COHORT

Approximately 30% of all grade 12 students, and 38% of graduates, entered a post-secondary institution in Alberta in the fall of 1999.[2] More than one in ten students leaving school without having graduated entered Alberta post-secondary institutions. A small number of students enrolled at Alberta's three residential universities[3] were without a diploma, in contrast to up to 37% of students at one public college. A far larger percentage of students without diplomas were enrolled at the four former vocational colleges, which provide a large proportion of upgrading.

Undergraduate degree programs were the most popular choice for grade 12 students entering post-secondary institutions. More than two in three high school graduates (68%), though only one in three (33.7%) non-graduates, were enrolled in either a bachelor's or university transfer program. Conversely, many more non-graduating than graduating students were in preparatory and upgrading programs. Very few grade 12 students (1.9%) were enrolled in trade certificate, skill training or applied degree programs.

The four most popular subject choices among students were General Arts and Science, General Science, Humanities and Social Sciences, and Business. These subjects represented 57% of all students. The three subject areas having the highest percentage of applicants who were offered admission were Academic Upgrading, English as a Second Language, and Job and Life Skills.

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1 In this report, the term "delayed entry students" is used only to denote those students who apply to the post-secondary system after being out of the K-12 system for one complete school year. This report presents only a partial picture of delayed entry students — students entering after more than a one year interruption are not included.

2 It is worth noting that each year, a significant number of Alberta grade 12 students enter post-secondary studies at institutions outside Alberta.

3 Alberta's three residential universities are the University of Alberta, the University of Calgary, and the University of Lethbridge. This term is used here and elsewhere in the report to distinguish these universities from Athabasca University, a distance-education university.

There is an important difference between being offered admission into a program and accepting that offer. Virtually all applicants (99%) to the four private colleges were offered admission, a higher rate than for applicants to universities and private university colleges (73% and 74%, respectively), public colleges (67%), and to technical institutes (58%). The variation is greatest among the public colleges, with the percentage of applicants offered admission ranging from 48% to 100%.

Characteristics of New Post-Secondary Students

Proportionally more females than males were attending post-secondary institutions among the grade 12 cohort. Males predominated only at the technical institutes and at Olds College. Female concentration, where at least 75% of attending students were female, was most evident in three subject areas: Biological and Life Sciences, Education, and Health. Male concentration was found in Civil Engineering, Electrical and Electronics, General Engineering, Mechanical Engineering and Transport.

New university students were about half a year younger, on average, than new students in the other public college and private university college sectors. New students at the private colleges and the technical institutes were also older. Students at the former vocational colleges were significantly older, with an average age of 25.4 years. With the exception of students at the former vocational colleges, where the average number of years to graduate was four years, students took about three years to graduate from high school.

Grade 12 students entering Alberta's universities had an average of 120 credits. This was higher than for students at the private university colleges (114 credits), the other public colleges (111 credits), the technical institutes (109 credits), the private colleges (87 credits), and the former vocational colleges (75 credits).

Students enrolled in universities had the highest overall grade 12 average at 77.3%. Students at the private university colleges, other public colleges, and technical institutes had an average about seven to nine percentage points less. Students entering the former vocational colleges and the private colleges had an average of 64.7%. Students performed slightly better in Mathematics 30 (72.4%) than in Language Arts 30 (70.3%) or Social Studies 30 (71%). Eighty-five percent of grade 12 students entering post-secondary institutions had credit in Mathematics 30 or 33, whereas significantly more students had passed Social Studies 30 or 33 (90%) and Language Arts 30 or 33 (95%).

Jurisdictional and Geographical Origin of New Post-Secondary Students

Regions vary in the percentage of their students who enroll directly in the post-secondary learning system, although some of this variation is attributable to demographic differences. At the jurisdictional level, about one-third (34%) of graduates from the northern half of the province and the central region (35%) enrolled directly in Alberta's post-secondary institutions. The southern region had slightly more students enrolled on a proportional basis (37%). The Calgary

region (41%) and the capital region (43%) had the highest proportion of graduates enrolled in the post-secondary system.

Francophone and Catholic jurisdictions (45% and 43%, respectively) sent a significantly greater proportion of their graduates to Alberta's post-secondary institutions than did the non-Catholic jurisdictions (37%).

At the geographical level, census division No. 4 (Hanna) and census division No. 19 (Grande Prairie) have the highest post-secondary attendance on a per-capita student basis. Census divisions No. 6 (Calgary) and No. 2 (Lethbridge) have the highest percentage of students attending universities.

Characteristics of Delayed Entry Students from the 1997/1998 Grade 12 Cohort

Twenty-eight percent of 1997/1998 grade 12 students proceeded directly to post-secondary institutions in the fall of 1998, and an additional 8.4% of this cohort entered the post-secondary system on a delayed basis in the fall of 1999.

Grade 12 students who delayed entry into post-secondary for one year were distinctive in several ways compared with students who proceeded directly from high school. For example, only 12% of students proceeding directly from grade 12 in 1998 were without a diploma, compared with 24% for those who delayed entry until 1999. Also, the students delaying entry had fewer credits and had lower course averages than students who proceeded directly.

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INTRODUCTION

Education is increasingly viewed as a comprehensive, life-long learning process, commencing before kindergarten and progressing through to post-secondary graduation and beyond. In response to this more holistic perspective of education, Alberta Learning has produced a yearly report examining the transition of Alberta's grade 12 students to our post-secondary system. The information in these reports is based on data exchanged within Alberta Learning between Information Services and the Alberta Council on Admissions and Transfer (ACAT). This compiled data set allows the tracking of students from the public system to the post-secondary system.

These reports provide an important source of information for policy makers in their evaluations of the linkages between the two education systems. Of particular significance is the ability to examine the extent to which demographic characteristics and academic outcomes for students in grade 12 are determinants of participation in post-secondary education. Hence, this research agenda provides stakeholders from both the K-12 system and post-secondary institutions with baseline information to assist in making policy decisions. Specifically, findings from this research can be used to inform policy discussions surrounding access and academic standards.

As in previous years, this report examines the demographic and academic characteristics of students registered in grade 12 who have continued to a post-secondary institution in the following year. In addition, this year's report includes a comparative analysis of key characteristics between those students who directly continue from grade 12 to a post-secondary institution and those who do not continue. This information is relevant to issues of post-secondary access since it identifies target groups who are less likely to continue their education at the post-secondary level.

The post-secondary participation rates provided in this report are based on the entire population of grade 12 students registered in at least one grade 12 course in the 1998/1999 school year. While this data set is a comprehensive representation of students, there are some limitations suggesting that the participation rates discussed in this report are slightly underestimated (see the section on "Methodological notes" for a discussion of these data limitations).

THE 1998/1999 GRADE 12 COHORT

TRANSITIONS TO POST-SECONDARY INSTITUTIONS

This section presents the results of analyses determining the rates of post-secondary participation among the total population of grade 12 students. The cohort includes all students registered in at least one grade 12 course in the 1998/1999 school year, excluding all non high school graduates who have reregistered in the 1999/2000 school year and who did not apply to an Alberta post-secondary institution. Also excluded are those students whose last institution was a post-secondary institution.

Figure 1 shows the flow of the 1998/1999 grade 12 cohort, while Figure 2 presents the transition rates from high school to post-secondary education among the grade 12 cohort. Of the 46,049 registered grade 12 students, 30% (13,740) attended a post-secondary institution in fall 1999. This compares with 28% of both the 1996/1997 and 1997/1998 cohorts.[1]

Figure 1 also shows the attendance rates based on diploma status: 38% of grade 12 graduates were attending a post-secondary institution, while approximately 13% of non-graduates were attending. Since most estimates of high school to post-secondary transition are based on high school graduates only, the breakdown by streaming status among diploma students is of particular value when making comparisons to prior research. For example, the attendance rate of 38% among graduates is similar to that of both the 1996/1997 and 1997/1998 cohort studies (37% for both cohorts). These earlier findings also resemble the rate of attendance estimated from a probability study done on 1985/1986 Edmonton high school graduates (39%).[2] In a similar vein, attendance rates among non-graduates for the three cohorts (1996/1997, 1997/1998, 1998/1999) have remained relatively stable at between 10% and 13%.

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1 Alberta Education. 1998. *Post-Secondary Transitions in Alberta: Educational Outcomes of the1996/1997 Grade 12 Cohort*. Edmonton: Alberta Education / Alberta Council on Admissions and Transfer; Alberta Learning. 2000. *Post-Secondary Transitions in Alberta: Educational Outcomes of 1997/1998 Grade 12 Students*. Alberta Learning / Alberta Council on Admissions and Transfer. While the addition of the three private colleges in the 1998/1999 cohort precludes a direct comparison between the results of the two earlier reports, since they represent less than 2% of the total number of students attending post-secondary institutions, the difference across years is negligible. See Table 3 for a more detailed breakdown of the transition process by institution and institutional sector.

2 Harvey Krahn and Graham S. Lowe. 1993. *The School-to-Work Transition in Edmonton, 1985-1992*. Edmonton: Population Research Laboratory.

Figure 1
Cohort Flow of 1998/1999 Alberta Learning Grade 12 Cohort

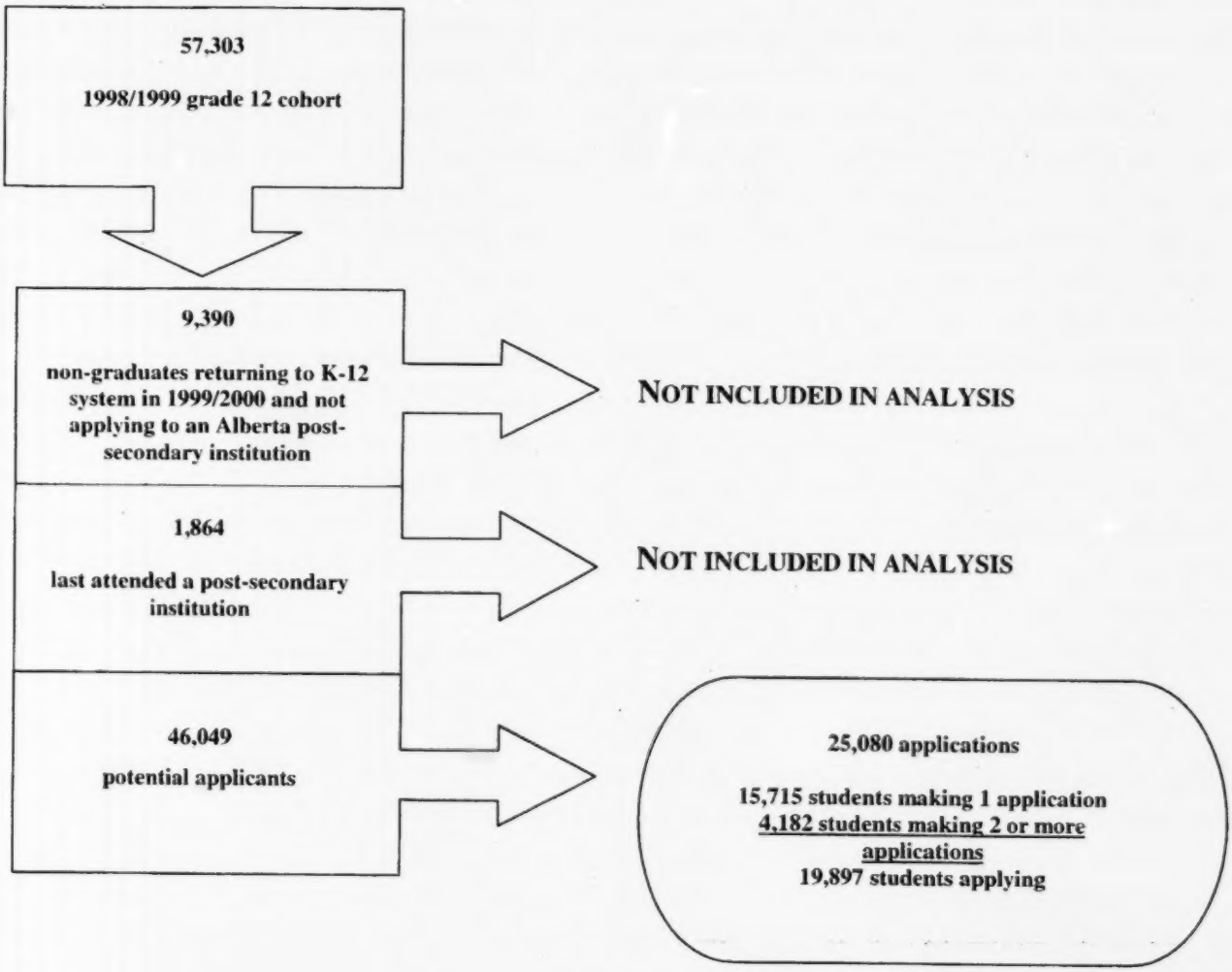
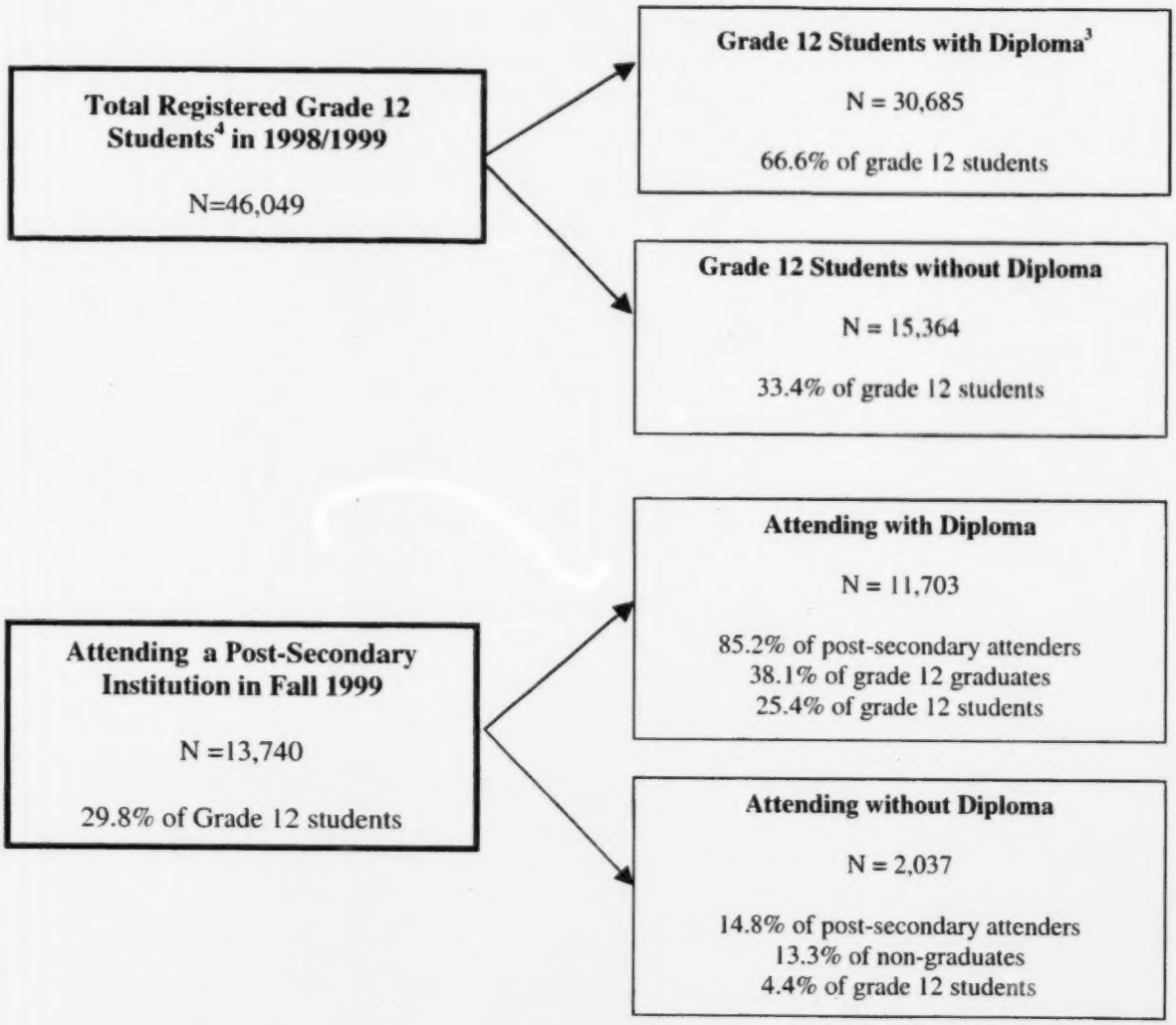


Figure 2
Graduation Status and Post-Secondary Education Status of 1998/1999 Alberta Grade 12 Students


Total Registered Grade 12 Students[4] in 1998/1999
N=46,049
Grade 12 Students with Diploma[3]
N = 30,685
66.6% of grade 12 students
Grade 12 Students without Diploma
N = 15,364
33.4% of grade 12 students
Attending a Post-Secondary Institution in Fall 1999
N =13,740
29.8% of Grade 12 students
Attending with Diploma
N = 11,703
85.2% of post-secondary attenders
38.1% of grade 12 graduates
25.4% of grade 12 students
Attending without Diploma
N = 2,037
14.8% of post-secondary attenders
13.3% of non-graduates
4.4% of grade 12 students

[3] Includes students receiving an Alberta High School Diploma or a High School Equivalency Diploma.

[4] Includes all students registered in grade 12 in an Alberta school in the 1998/1999 school year (57,303), less non-graduates who registered in the K-12 system again in the 1999/2000 school year and who did not apply to an Alberta post-secondary institution (9,390), and those students whose last institution attended was a post-secondary institution (1,864).

COMPARISON BETWEEN POST-SECONDARY ATTENDERS AND NON ATTENDERS

Students from a variety of backgrounds enter the post-secondary system. Hence, it is useful to examine the characteristics of those who attend a post-secondary institution and compare them with those grade 12 students who do not continue their education at the post-secondary level.

Table 1 presents some demographic and academic characteristics of the two groups (attenders and non attenders). While the gender ratio among the pool of grade 12 students is about 50/50, a slightly greater proportion of female students were attending a post-secondary institution (27%, compared to 22% of males). These findings support other research showing the gains made in female representation in the post-secondary system in recent years.[5] As noted later in this report (see Table 7 and Table 9), however, significant gender differences remain at the institutional and program levels.

By far the age groups having the largest proportion of attenders were the 17 and 18-year age groups (35% and 29%, respectively), followed by those younger than 17 (21%). In contrast, high school students 19 years of age and over were considerably less likely, on average, to have continued their education in the post-secondary system.[6]

Table 1 also presents the percentage of students who completed three diploma examination subjects for each group of attenders and non-attenders. Completion of Mathematics 30/33 (36%) or completion of all three of these core courses (37%) are stronger predictors of attendance. While students who completed Language Arts 30/33 or Social Studies 30/33 are somewhat more likely to be attending a post-secondary institution than the average grade 12 student, completion of these courses is a weaker predictor of attendance. In summary, the results from Table 1 suggest that males, older students, and those who did not complete Mathematics 30/33 or all core courses are the least likely groups to be represented at the post-secondary level.

Table 2 presents the mean grade 12 average, mean credits earned and mean years taken to earn a diploma for those attending a post-secondary institution and those who did not continue their post-secondary education in the 1999/2000 school year. As we would expect, grade 12 students who were attending a post-secondary institution had achieved a higher high school average and earned more credits than non-attenders.

The results from Table 2 and the course completions section of Table 1 indicate a fairly strong relationship between grade 12 academic achievement and the likelihood of attending a post-secondary institution. Nevertheless, it is to be noted that there are other non-academic reasons why some grade 12 students do not attend a post-secondary institution.

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5 See Statistics Canada. 2000. *Education Indicators in Canada: Report of the Pan-Canadian Education Indicators Program, 1999.* Catalogue no. 81-582-XPE.

6 While we might presume that older grade 12 students are less likely to continue their education because they are more likely to have not obtained a high school diploma, additional analyses (not shown) of the differences in attendance rates between the age groups among those with and without diplomas suggests that this is not the case. In fact, older students without high school diplomas were slightly more likely to be attending a post-secondary institution than younger students without diplomas.

Table 1
Post-secondary Attendance Status by Gender, Age,[7] and Core Grade 12 Course Completions

Characteristic	Total	% Attending	% Not Attending
Gender			
Female	23375	27	73
Male	22674	22	78
Age			
<17	90	21	79
17	6729	35	65
18	21174	29	71
19	8773	17	83
20 - 21	4919	15	85
22 - 30	2849	16	84
31- 40	1040	15	85
40+	475	12	88
Course Completions			
Mathematics 30/33	27334	36	64
Language Arts 30/33	37581	29	71
Social Studies 30/33	35483	29	71
All courses	25411	37	63
TOTAL	**46049**	**11338**	**34711**
	(100%)	(25%)	(75%)

Table 2
Post-secondary Attendance Status by Mean Grade 12 Average[8], Credits Earned, and Years to Earn Diploma[9]

	Total	All Students	Students Attending	Students Not Attending
Mean Grade 12 Average	42270	67.8	73.1	65.9
Mean Credits Earned	45236	100.9	113.7	96.8
Mean Years to Earn Diploma	31087	3.2	3.1	3.2

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7 Age calculated as of 1 September 1999.

8 Based on the average of all grade 12 courses completed by end of the 1998/1999 school year. In the case of multiple course completions, the highest mark awarded is used.

9 Includes students with a high school diploma (n=31,087) and is based on the difference between the year and month the student started grade 10 and the year and month they earned their diploma.

Students Entering Post-Secondary Institutions By Program Type

As shown in Table 3, almost half of all students (47.4%) attending post-secondary institutions were registered in bachelor's degree programs.[10] One-fifth of students (19.2%) were in diploma programs, and 15.9% were registered in university transfer programs.

As expected, there were differences in the types of programs students were in depending on their graduation status.[11] Almost one-quarter of students who had not graduated from high school were in preparatory and upgrading programs, compared with only 1.8% of graduates. More than twice the proportion of graduates vs. non-graduates was enrolled in bachelor degree level programs (51.5% vs. 21.4%), and more graduates compared with non-graduates were registered in university transfer programs (16.5% vs. 12.3%). In comparison to graduates, more than twice as many non-graduates, proportionally, were in certificate programs (5.4% vs. 11.0%). Very few post-secondary students were enrolled in trade certificate, skill training, applied degree or other career programs.

Variation is also evident when examining the percentage of students in each of the sectors registered in the different program areas (Table 4). Over 90% of students enrolled in a bachelor's degree program were in universities. Almost all of the remaining bachelor's degree students were in the private university colleges. Students in diploma programs were split between the two technical institutes and the public colleges. Four of five students (81.9%) in certificate programs are in the public colleges, with the remainder at NAIT or SAIT. Over 70% of students in general studies programs are in public colleges, and just under one-quarter are in universities. And, as expected, all students in university transfer programs are enrolled in the public colleges. The public colleges, which include the former vocational colleges, together have 81.2% of the preparatory and upgrading students as well as 92.3% of students in skill training. Over eighty percent of trades' students are at NAIT or SAIT, and the very few students in applied degree and other career programs are all in the public colleges.

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[10] It is to be noted that data reported for *bachelor's degree* level programs do not capture students registered in applied degree programs and university transfer programs. Rather, references to Bachelor's degree programs here and in the following tables refer only to the program type classification of 'UG.'

[11] It is important to note that an Alberta high school diploma is not necessarily a requirement for entrance into many post-secondary education programs. Post-secondary institutions' entrance requirements typically ask for completion of certain matriculation subjects as opposed to a diploma. This is to be borne in mind when talking about graduates vs. non-graduates.

Table 3
Grade 12 Students Attending Post-Secondary Institutions by Graduation Status and Program Type[12]

Program Type		% Entering (Graduates)	% Entering (Non-Graduates)	% Entering (All Students)
AD	Applied Degree	0.3	--	0.3
C	Certificate	5.4	11.0	6.2
D	Diploma	19.0	20.6	19.2
GS	General Studies	3.9	7.8	4.4
OC	Other Career	0.2	--	0.2
PU	Preparatory and Basic Upgrading	1.8	22.6	4.7
SK	Skill Training	0.6	2.8	0.9
TC	Trade Certificate	0.6	1.2	0.7
UG	Bachelor's Degree	51.5	21.4	47.4
UT	University Transfer	16.5	12.3	15.9
	ALL PROGRAMS	**99.8**	**99.7**	**99.9**

-- Percentages based on numbers less than 6 have been suppressed to protect the privacy of individuals. Totals exclude suppressed values.

Table 4
Grade 12 Students Attending Post-Secondary Institutions by Sector and Program Type[13]

	% Entering by Program Type										
Sector	**All Programs**	**AD**	**C**	**D**	**GS**	**PU**	**SK**	**TC**	**UG**	**UT**	**OC**
Universities	6054	0.0	0.0	0.0	23.7	0.0	0.0	0.0	92.3	0.0	0.0
Public Colleges	5358	100.0	81.9	50.7	71.3	81.2	92.3	15.2	1.0	100.0	100.0
Private Colleges	27	0.0	0.0	0.0	2.5	1.9	0.0	0.0	0.0	0.0	0.0
Private University Colleges	445	0.0	--	0.0	0.0	1.9	0.0	0.0	6.8	0.0	0.0
Technical Institutes	1630	--	18.1	49.3	2.5	15.0	7.7	84.8	0.0	0.0	0.0
ALL SECTORS	**13514**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

-- Percentages based on numbers less than 6 have been suppressed to protect the privacy of individuals. Totals exclude suppressed values.

[12] Includes only credit programs at post-secondary institutions.
[13] Includes only credit programs at post-secondary institutions.

Students Entering Post-Secondary Institutions By Subject Area

Table 5 provides a wealth of information regarding the subject area that grade 12 students were registered in. For all attending students, the four most popular subject areas were General Science (N=2204), General Arts and Science (N=2173), Humanities and Social Sciences (N=2041), and Business (N=1278). These four subject areas accounted for 57% of all students. At the opposite end of the spectrum, only 12 students were enrolled in Transport and related subjects. The two other subject areas with the fewest students were English as a Second Language (N=28) and Job and Life Skills (N=33). These three subject areas accounted for less than 1% of all students.

For almost all subject areas, the majority of students enrolled had graduated from high school. In only two subject areas, Academic Upgrading (76%) and College/University Preparation (60%), did a majority of students not have a diploma.

The last three columns of Table 5 indicate the number of students attending in various subject areas by broad post-secondary sector, and there are notable differences among the sectors. For several of the subject areas, there were no students enrolled in universities, and for many other subject areas, very few students were enrolled in universities. In five subject areas (General Arts and Science, Civil Engineering, General Engineering, Humanities and Social Sciences, and General Science) more than 50% of students were attending universities. In fact, the two subject areas of Arts and Science (General) and Science (General) accounted for more than 50% of students attending universities. Subject areas having a majority of students enrolled in the technical school sector included Architecture and Environmental Design, Chemical and Resources, Electrical and Electronics, Mechanical Engineering, Medicine and Dentistry, and Services and Hospitality. All other programs had a majority of their enrolment in the college sector except for Biological and Life Sciences, which was the only subject area that did not have more than 50 percent of their students enrolled in any one sector.

Readers should note, when interpreting these tables, that the subject area information described in these tables is still quite broad, and doesn't allow analysis of actual program content. Additionally, similar programs at different institutions are sometimes classified as being in different subject areas. As an example, the Bachelor of Science degree at both the University of Lethbridge and King's University College is rolled up to the subject area of 'Science (General),' while the Bachelor of Science degree at the University of Calgary is rolled up to the subject area of 'Arts and Science (General).'

Table 5
Grade 12 Students Attending Post-Secondary Institutions by Graduation Status, Sector and Subject Area[14]

	All Students, by Graduation Status			All Students, by Sector		
Subject Area	**Total Attending**	**Graduates Attending**	**Non-graduates Attending**	**Attending Universities**	**Attending Colleges[15]**	**Attending Technical**
Academic Upgrading	80	19	61	0	80	0
Agricultural (& related)	221	203	18	47	161	13
Architecture & Env. Design	77	71	6	0	8	69
Arts & Science (General)	2173	2021	152	1878	295	0
Biological & Life Sciences	62	54	8	25	14	23
Business (& related)	1278	1047	231	14	861	403
Chemical & Resources	121	103	18	--	--	111
Civil (engineering & related)	511	481	30	372	12	127
College/University Preparation	498	200	298	0	403	95
Communications (& related)	159	145	14	0	90	69
Education (& related)	610	534	76	146	464	0
Electrical & Electronics	187	159	28	--	--	182
Engineering (Gen. & related)	636	583	53	418	203	15
English as a Second Language	28	--	--	0	28	0
Fine & Performing Arts	438	398	40	144	280	14
Health Related (not incl. MD)	413	340	73	137	263	13
Humanities & Social Sciences	2041	1890	151	1187	854	0
Information Technology	176	143	33	0	123	53
Job & Life Skills	33	--	--	0	33	0
Mechanical (eng & related)	280	223	57	0	56	224
Medicine & Dentistry	60	52	8	--	--	53
Renewable Resources	109	99	10	27	62	20
Science (General)	2204	2016	188	1486	718	0
Services & Hospitality	230	189	41	21	83	126
Social & Community Services	329	256	73	--	305	--
Transport (& related)	12	--	--	0	12	0
Unclassified	546	427	119	141	405	0
Vocational Preparation	--	--	--	0	--	0
ALL SUBJECT AREAS	**13512**	**11653**	**1786**	**6043**	**5813**	**1610**

-- Numbers less than 6 and percentages based on numbers less than 6 have been suppressed to protect the privacy of individuals. Totals exclude suppressed values.

[14] Includes only credit programs at post-secondary institutions.

[15] Includes public colleges, private colleges and private university colleges.

Table 6 presents the distribution of grade 12 students who applied, were offered admission and were attending post-secondary institutions by subject area. The column *% of Applicants Offered Admission* is, in one respect, a measure of the degree of difficulty in entering a particular subject area. The three subject areas having the highest percentage of applicants who were offered admission were Academic Upgrading, English as a Second Language, and Job and Life Skills, where at least 87% of applicants were offered admission. Conversely, the three subject areas having the lowest percentage of applicants who were offered admission included Communications, Medicine and Dentistry, and Transport. For example, only 38% of students applying to Medicine and Dentistry programs were offered admission. The column on the percentage of applicants attending follows closely the pattern of the previous column. And the last column *(% of Offered Admission Attending)* provides data on students attending as a percentage of those offered admission. It is an important column, since it indicates the extent to which an institution can 'overbook' students in certain programs. In the subject areas of English as a Second Language, Health, Job and Life Skills, and Transport, for example, almost all students (at least 90% in each case) who were offered admission to these programs decided to register. Conversely, the subject areas having the lowest percentage of students attending of those offered admission were Unclassified (64.8%), Vocational Preparation (62.5%), and Academic Upgrading (60.2%).

The literature on the inequalities of educational opportunities has often noted that one of the most pervasive bases of social and educational inequality is gender. While female students have moved into several non-traditional areas of study, particularly in the professions, gender differences persist throughout the educational system. Table 7 shows the distribution of post-secondary attendance in the various subject areas by gender. In three of these areas (Biological and Life Sciences, Education, and Health), at least three-quarters of students attending were female. Conversely, male concentration was found in Civil Engineering, Electrical and Electronics, General Engineering, Mechanical Engineering, and Transport, where less than one-quarter of the students attending in these subject areas were female. Thus, these data are able to confirm findings in probability surveys on career aspirations, which show that females continue to aspire predominately to medicine and health, and teaching fields, while males are more likely to aspire to engineering and math related fields.[16]

[16] See, for example, the *1995 High School Survey* (Alberta Advanced Education and Career Development, May 1997).

Table 6
Grade 12 Students Applying, Offered Admission, and Attending Post-Secondary Institutions by Subject Area[17]

Subject Area	Total Applicants	Total Offered Admission	Total Attending	% of Applicants Offered Admission	% of Applicants Attending	% Offered Admission Attending
Academic Upgrading	153	133	80	86.9	52.3	60.2
Agricultural (& related)	420	276	221	65.7	52.6	80.1
Architecture & Env. Design	232	89	77	38.4	33.2	86.5
Arts & Science (General)	3570	2515	2173	70.4	60.9	86.4
Biological & Life Sciences	142	92	62	64.8	43.7	67.4
Business (& related)	2472	1675	1278	67.8	51.7	76.3
Chemical & Resources	205	161	121	78.5	59.0	75.2
Civil (engineering & related)	795	611	511	76.9	64.3	83.6
College/University Preparation	823	701	498	85.2	60.5	71.0
Communications (& related)	567	185	159	32.6	28.0	85.9
Education (& related)	1150	756	610	65.7	53.0	80.7
Electrical & Electronics	480	276	187	57.5	39.0	67.8
Engineering (Gen. & related)	926	744	636	80.3	68.7	85.5
English as a Second Language	30	30	28	100.0	93.3	93.3
Fine & Performing Arts	858	496	438	57.8	51.0	88.3
Health Related (not incl. MD)	897	448	413	49.9	46.0	92.2
Humanities & Social Sciences	3340	2498	2041	74.8	61.1	81.7
Information Technology	518	229	176	44.2	34.0	76.9
Job & Life Skills	37	35	33	94.6	89.2	94.3
Mechanical (eng & related)	553	381	280	68.9	50.6	73.5
Medicine & Dentistry	214	81	60	37.9	28.0	74.1
Renewable Resources	198	137	109	69.2	55.1	79.6
Science (General)	3556	2610	2204	73.4	62.0	84.4
Services & Hospitality	490	337	230	68.8	46.9	68.2
Social & Community Services	855	380	329	44.4	38.5	86.6
Transport (& related)	42	12	12	28.6	28.6	100.0
Unclassified	1021	842	546	82.5	53.5	64.8
Vocational Preparation	14	--	--	57.1	35.7	62.5
ALL SUBJECT AREAS	**24558**	**16730**	**13512**	**68.2**	**55.0**	**80.8**

-- Numbers less than 6 and percentages based on numbers less than 6 have been suppressed to protect the privacy of individuals. Totals exclude suppressed values.

[17] Includes only credit programs at post-secondary institutions.

Table 7
Grade 12 Students Attending Post-secondary Institutions by Gender and Subject Area[18]

Subject Area	Total Attending	Female Attending	Male Attending	Female as a % of Attending
Academic Upgrading	64	36	28	56.3
Agricultural (& related)	240	132	108	55.0
Architecture & Env. Design	70	35	35	50.0
Arts & Science (General)	1929	1104	825	57.2
Biological & Life Sciences	80	67	13	83.8
Business (& related)	1236	822	414	66.5
Chemical & Resources	171	47	124	27.5
Civil (engineering & related)	156	27	129	17.3
College/University Preparation	501	266	235	53.1
Communications (& related)	148	94	54	63.5
Education (& related)	505	382	123	75.6
Electrical & Electronics	555	112	443	20.2
Engineering (Gen. & related)	619	130	489	21.0
English as a Second Language	11	--	--	--
Fine & Performing Arts	405	242	163	59.8
Health Related (not incl. MD)	320	300	20	93.8
Humanities & Social Sciences	1747	1180	567	67.5
Information Technology	124	47	77	37.9
Job & Life Skills	57	28	29	49.1
Mechanical (eng & related)	287	24	263	8.4
Medicine & Dentistry	52	--	--	--
Renewable Resources	152	75	77	49.3
Science (General)	1907	1013	894	53.1
Services & Hospitality	277	184	93	66.4
Social & Community Services	285	209	76	73.3
Transport (& related)	6	0	6	0.0
Unclassified	669	388	281	58.0
ALL SUBJECT AREAS	**12573**	**6944**	**5566**	**55.2**

-- Numbers less than 6 and percentages based on numbers less than 6 have been suppressed to protect the privacy of individuals. Totals exclude suppressed values.

[18] Includes only credit programs at post-secondary institutions.

POST-SECONDARY ATTENDERS

This section presents results of analyses on the transition process, demographic characteristics and academic experiences among those grade 12 students who went on to attend a post-secondary institution, including students who applied to more than one institution.[19]

Student Offers and Student Attendance at Post-Secondary Institutions

The data exchange process included information on the institution(s) applied to by the student, whether the student was offered admission by that institution, whether the student accepted, and whether the student was attending the institution. This allows us to see each stage of the transition process and assess the complexities involved in entering a particular institution (see the section titled "The complexity of the post-secondary application process" in the last section of this report for a more detailed review of the stages involved in the application process).

Table 8 presents the percentage of applicants who were offered admission and who were attending for each post-secondary institution. Offers were made to 70% of all applicants, and of those offered, 81% were attending,[20] for an overall attendance rate of 56%. Thus, slightly more than half of all applicants to post-secondary institutions were attending.

There is, however, considerable variation across institutional sectors. Interestingly, the two technical institutions and the public colleges (and particularly the other[21] public colleges) have the lowest rate of offers (58% and 67%, respectively). At the other end of the distribution are private colleges, where offers were made to almost the entire applicant pool. Universities and private university colleges are approximately in the middle of this distribution, with 73% being offered admission at the universities and 74% being offered at the private university colleges.

There is slightly less variation between sectors when looking at the proportion of those offered who were attending. In one respect, these figures are a measure of the degree of interest applicants have in attending that particular institution or institutional sector. Thus, the data suggest that universities and private colleges are the most desirable institutions with offer/attendance rates of 89% and 85%, respectively.

These sector totals also mask considerable variation within each type of institution. With the exception of Athabasca University (100%) in the university sector and Concordia University College (55%) in the private university college sector, the offer rates are quite similar within each of these sectors. Among the public colleges, the former vocational colleges are generally more likely to both offer admission and have the offers accepted by the student than other public colleges.

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[19] Of the 19,897 applicants reported on here, 15,715 applied to a single institution, while 4,182 applied to two or more institutions.

[20] These figures are comparable to those found in the 1996/1997 and 1997/1998 reports where for both cohort years 69% were offered admission and 83% of those offered were attending.

[21] Although the four former vocational colleges are now part of the public system (since 1997), and are categorized as such in the tables which follow, for ease of reporting, the term "former vocational colleges" will be used in the text to differentiate them from the "other public colleges."

An interpretation of these data must not only include the perspective of the institution, but also the applicants' thought processes in their decisions of where to apply. For example, it is likely that students self-select themselves such that they apply to institutions for which they feel they have a reasonable chance of being accepted, given their academic background and financial capability. Hence, the relatively low offer rates among the technical institutions does not necessarily mean that these two schools are using higher standards than universities in their decisions to make offers to applicants since those who apply to universities will tend to have stronger academic credentials. In addition, some institutions have limits on the number of applications that they will accept, for example, three times the number of places in the program; applications over and above the limit are returned to the student with an explanatory note. This process saves the student from paying an application fee for a program that is probably already full. Thus, in assessing the degree of difficulty involved in accessing a particular institution or institutional sector, comparisons between institutions must be made carefully.

Table 8
Grade 12 Students Offered Admission and Attending Post-Secondary Institutions

Institution	% of Applicants Offered Admission	% of Applicants Offered Attending	% of All Applicants Attending
Universities			
Athabasca University	100	100	100
University of Alberta	73	92	67
University of Calgary	70	89	62
University of Lethbridge	87	78	69
Universities Total	**73**	**89**	**65**
Private University Colleges			
Augustana University	92	64	59
Canadian University College	94	84	82
Concordia University College of Alberta	55	82	46
The King's University College	95	69	66
Private University Colleges Total	**74**	**73**	**54**
Public Colleges			
Alberta College of Art and Design	63	99	62
Fairview College	67	94	63
Grande Prairie Regional College	91	82	75
Grant MacEwan Community College	48	80	44
Keyano College	85	83	70
Lakeland College	67	69	47
Lethbridge Community College	82	67	55
Medicine Hat College	91	79	73
Mount Royal College	56	66	37
Olds College	71	79	56
Red Deer College	94	67	63
Total	***65***	***73***	***50***
Public Colleges since 1997 [1]			
NorQuest College	98	90	88
Northern Lakes College	65	78	51
Bow Valley College	100	89	89
Portage College	85	75	64
Public Colleges since 1997 Total	***89***	***85***	***75***
Public Colleges Total	**67**	**75**	**52**
Private Colleges			
Alberta College	100	83	83
Canadian Nazarene College	83	100	83
North American Baptist College	100	88	88
St. Mary's College	100	92	92
Private Colleges Total	**99**	**85**	**85**
Technical Institutes			
NAIT	56	65	36
SAIT	62	74	46
Technical Institutes Total	**58**	**69**	**40**
TOTAL	**70**	**81**	**56**

Note: (1) In previous transition studies, these colleges were reported as a separate category called "Vocational Colleges." While they are now public colleges (since 1997), we continue the practice of reporting them separately as part of the "Public Colleges" sector.

CHARACTERISTICS OF NEW POST-SECONDARY STUDENTS

This section presents data on selected demographic and academic characteristics of new post-secondary students for each institution. These data are based on the number of students attending each institution and thus include students who are attending more than one institution.

Table 9 presents some of these characteristics for students with 13,952 concurrent registrations by post-secondary institution. The column on *Total Attending* presents the total number of students attending each institution and shows that the majority of students are attending universities (6,057) and public colleges (5,374). The column *% Without Diplomas* represents the percentage of post-secondary students who do not have a high school diploma. Students attending the former vocational colleges, Fairview College and Alberta College are considerably more likely, on average, to not have a diploma.

While in most institutions between 50% and 60% of new students are female, there are some notable exceptions. Athabasca University, King's University College, Red Deer College, and the former vocational colleges have the highest proportion of female students attending (at least 65%). The only institutions where less than half of the students are female are Olds College, NAIT, and SAIT.

The average age for the total post-secondary cohort is 19.4 years. Students entering the public colleges are about three-quarters of a year older than students entering the three residential universities. Students attending Athabasca University and Alberta College are also older, and students attending the former vocational colleges are significantly older, with an average age of 25.4 years.

Table 9
Percent without Diplomas, Percent Female and Average Age by Post-Secondary Institution

Institution	Total Attending	% Without Diplomas	% Female Attending	Average Age
Universities				
Athabasca University	39	31	69	21.4
University of Alberta	3058	8	53	18.6
University of Calgary	2399	4	53	18.5
University of Lethbridge	561	4	62	18.6
Universities Total	**6057**	**7**	**54**	**18.6**
Private University Colleges				
Augustana University	170	6	64	18.4
Canadian University College	28	18	57	18.7
Concordia University College of Alberta	188	16	60	20.0
The King's University College	61	15	66	19.2
Private University Colleges Total	**447**	**12**	**62**	**19.2**
Public Colleges				
Alberta College of Art and Design	85	6	61	18.8
Fairview College	59	37	54	19.7
Grande Prairie Regional College	382	15	63	19.3
Grant MacEwan Community College	1369	15	61	19.9
Keyano College	164	21	57	18.7
Lakeland College	127	30	57	19.1
Lethbridge Community College	353	14	56	19.2
Medicine Hat College	313	13	62	18.7
Mount Royal College	960	13	63	19.3
Olds College	145	23	49	19.3
Red Deer College	759	8	70	18.9
Total	***4716***	***14***	***62***	***19.3***
Public Colleges since 1997				
Bow Valley College	200	70	71	23.5
NorQuest College	259	67	72	25.0
Northern Lakes College	104	81	76	28.8
Portage College	95	66	67	27.2
Public Colleges since 1997 Total	***658***	***70***	***72***	***25.4***
Public Colleges Total	**5374**	**21**	**63**	**20.1**
Private Colleges				
Alberta College	335	72	57	22.2
Canadian Nazarene College	10	--	--	18.4
North American Baptist College	44	5	66	18.4
St. Mary's College	54	4	67	18.7
Private Colleges Total	**443**	**56**	**60**	**21.3**
Technical Institutes				
NAIT	840	13	44	20.0
SAIT	791	18	40	20.2
Technical Institutes Total	**1631**	**16**	**42**	**20.1**
TOTAL	**13952**	**15**	**57**	**19.4**

-- Percentages based on numbers less than 6 have been suppressed to protect the privacy of individuals. Totals exclude suppressed values.

Note: Total attending (13,952) includes concurrent registrations.

Grade 12 Course Averages, Credits Earned and Mean Years to Graduate

Table 10 presents the academic credentials earned by students for each post-secondary institution. The university sector (Athabasca University being an exception) stands out as having students with the highest grade 12 average (77.3%), the most credits earned in high school (120) and the fewest number of years taken to earn a diploma (3.0). Among the private university colleges, students entering Canadian University College stand out as having the strongest academic background. The other public colleges and technical institutes tend to resemble the private university colleges while students entering the former vocational public colleges have somewhat lower average grade 12 marks, considerably fewer credits and have taken longer to complete their diploma. Among the private colleges there is a considerable range of academic credentials with students entering Alberta College representing the low end of the distribution and students entering Canadian Nazarene the high end.

Compared to the figures presented in Table 2, we can see that all but one sector of post-secondary attenders have higher scores than for all three measures of those grade 12 students who did not go on to attend a post-secondary institution. The one exception is the former vocational colleges sector, whose students have a slightly lower grade 12 average, a much lower number of credits earned and have taken more time to graduate. These comparisons of the two tables suggest that the academic credentials of those students who attended a post-secondary institution are consistently higher than those who did not attend, irrespective of institution.

Table 11 presents the average grades for Mathematics 30, Language Arts 30 and Social Studies 30 by institutional sector and for each post-secondary institution. Again, residential university attenders have the highest averages in all three courses (77.1% for Mathematics 30, 74.2% for Language Arts 30 and 75.3% for Social Studies 30). Students attending the private university colleges and the public colleges have a similar Mathematics 30 average of between 65 and 66 percent, significantly lower than that of the universities. The exception is Canadian University College, whose students have the same average as students entering the University of Lethbridge. Among private university colleges, there is a considerable amount of variation; as with the 1997 and 1998 cohorts, Concordia University College continues to lag behind the other three private university colleges in terms of overall and course specific grade 12 averages. Among the other public colleges, the range in Mathematics 30 averages is from 56.2% at Fairview College to 68.9% at Grant MacEwan Community College. The average for Mathematics 30 at the technical institutes and at the private colleges is quite similar, and is lowest at the former vocational colleges.

A similar pattern emerges in examining Language Arts 30 and Social Studies 30 course averages. The highest averages for both Language Arts 30 and Social Studies 30 are found among students entering the three residential universities, Canadian Nazarene College, and North American Baptist College, while the lowest averages are found among students entering the former vocational colleges.

Table 10
Mean Grade 12 Average, Mean Credits Earned and Mean Years to Earn Diploma by Post-Secondary Institution

Institution	Mean Grade 12 Average	Mean Credits Earned	Mean Years to Earn Diploma
Universities			
Athabasca University	67.7	108	3.9
University of Alberta	77.3	122	3.0
University of Calgary	77.9	120	3.0
University of Lethbridge	75.6	119	3.0
Universities Total	**77.3**	**120**	**3.0**
Private University Colleges			
Augustana University	71.8	114	3.0
Canadian University College	74.4	116	3.0
Concordia University College of Alberta	66.2	114	3.4
The King's University College	69.7	114	3.0
Private University Colleges Total	**69.3**	**114**	**3.1**
Public Colleges			
Alberta College of Art and Design	71.6	114	3.0
Fairview College	66.7	96	3.0
Grande Prairie Regional College	69.9	108	3.1
Grant MacEwan Community College	70.3	112	3.2
Keyano College	68.9	109	3.1
Lakeland College	68.4	108	3.1
Lethbridge Community College	69.2	110	3.1
Medicine Hat College	70.7	109	3.0
Mount Royal College	68.6	111	3.1
Olds College	68.5	106	3.1
Red Deer College	70.7	115	3.1
Total	***69.8***	***111***	***3.1***
Public Colleges since 1997			
Bow Valley College	65.5	77	3.4
NorQuest College	65.0	74	3.7
Northern Lakes College	63.8	68	6.1
Portage College	63.5	80	4.8
Public Colleges since 1997 Total	***64.7***	***75***	***4.0***
Public Colleges Total	**69.2**	**107**	**3.1**
Private Colleges			
Alberta College	62.0	77	3.7
Canadian Nazarene College	73.9	121	3.1
North American Baptist College	73.9	117	3.0
St. Mary's College	69.0	118	3.0
Private Colleges Total	**64.7**	**87**	**3.3**
Technical Institutes			
NAIT	68.5	111	3.2
SAIT	67.3	107	3.1
Technical Institutes Total	**67.9**	**109**	**3.2**
TOTAL	**72.5**	**112**	**3.1**

Table 11
Mathematics 30, Language Arts 30, and Social Studies 30 Course Averages by Post-Secondary Institution

Institution	Mathematics 30 (N=9999)	Language Arts 30 (N=11674)	Social Studies 30 (N=10305)
Universities			
Athabasca University	65.6	65.7	66.3
University of Alberta	77.5	74.9	76.3
University of Calgary	77.9	74.0	75.0
University of Lethbridge	71.7	72.3	72.0
Universities Total	**77.1**	**74.2**	**75.3**
Private Universities Colleges			
Augustana University	66.9	70.4	69.5
Canadian University College	71.7	69.6	67.9
Concordia University College of Alberta	63.4	64.7	63.6
The King's University College	66.9	69.1	66.6
Private Universities Colleges Total	**65.7**	**67.7**	**66.7**
Public Colleges			
Alberta College of Art and Design	61.2	69.0	68.3
Fairview College	56.2	66.0	62.3
Grande Prairie Regional College	67.2	67.9	67.8
Grant MacEwan Community College	68.9	68.5	67.5
Keyano College	65.0	68.0	67.0
Lakeland College	64.2	66.9	65.7
Lethbridge Community College	64.5	64.0	63.8
Medicine Hat College	67.8	67.7	68.0
Mount Royal College	64.6	65.6	65.0
Olds College	62.9	63.9	63.2
Red Deer College	67.8	67.9	66.9
Total	***66.9***	***67.2***	***66.6***
Public Colleges since 1997			
Bow Valley College	60.9	62.1	58.4
NorQuest College	63.0	59.8	56.6
Northern Lakes College	59.6	61.6	57.4
Portage College	54.0	60.6	56.1
Public Colleges since 1997 Total	***60.7***	***60.9***	***57.3***
Public Colleges Total	**66.7**	**66.9**	**66.3**
Private Colleges			
Alberta College	63.9	60.6	61.2
Canadian Nazarene College	69.4	78.2	71.3
North American Baptist College	69.3	72.9	71.5
St. Mary's College	62.4	65.7	65.5
Private Colleges Total	**64.9**	**64.9**	**65.0**
Technical Institutes			
NAIT	66.0	65.5	64.7
SAIT	64.1	62.2	63.6
Technical Institutes Total	**65.1**	**63.9**	**64.2**
TOTAL	**72.4**	**70.3**	**71.0**

Mathematics, Language Arts and Social Studies Course Streams

Table 12 presents the proportion of students who completed the three grade 12 core courses for each institution. Overall, students were the least likely to have completed Mathematics 30/33 (85%) and the most likely to have completed Language Arts 30/33 (95%).[22] Just over 80% of students completed all three core courses.

The pattern of course completions resembles the sector breakdowns of academic credentials presented in Table 10 and Table 11. Again, with the exception of Athabasca University, university students are the most likely to have completed any one of these courses as well as all three of them (93%). Not far behind, however, are the private university colleges, with 87% of students entering having completed all three core courses. Students entering the other public colleges and technical institutes are slightly less likely to have completed these courses. Within the other public college sector there is considerable variation — the percentage of students entering having completed Mathematics 30/33, for example, ranges from 62% at Olds College to 86% at Grant MacEwan Community College. For both Language Arts 30/33 and Social Studies 30/33, students entering Alberta College of Art and Design have the highest averages, while students entering Lakeland College have the lowest.

Less than half of students entering the private colleges and only one-fifth of students entering the former vocational colleges completed all three courses. The majority of students, however, from the private colleges completed at least one of the courses. In contrast only 30% of students entering the former vocational colleges completed Mathematics 30/33.

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[22] It is important to note that English Language Arts 30 or 33 or Français 30 or 33 is required for obtaining an Alberta High School Diploma, while Mathematics 30 or 33 is not.

Table 12
Percentage of Students Completing Mathematics 30/33, Language Arts 30/33, Social Studies 30/33 and All Three Course Completions by Post-secondary Institution

Institution	% with Mathematics 30/33 Complete	% with Language Arts 30/33 Complete	% with Social Studies 30/33 Complete	% with all 3 Courses Complete
Universities				
Athabasca University	67	85	74	59
University of Alberta	96	98	95	92
University of Calgary	97	99	98	96
University of Lethbridge	95	99	98	93
Universities Total	**96**	**98**	**96**	**93**
Private University Colleges				
Augustana University	89	99	98	89
Canadian University College	93	93	96	86
Concordia University College of Alberta	92	99	92	85
The King's University College	87	97	90	85
Private University Colleges Total	**90**	**98**	**94**	**87**
Public Colleges				
Alberta College of Art and Design	73	98	97	72
Fairview College	63	83	76	56
Grande Prairie Regional College	79	95	92	78
Grant MacEwan Community College	86	95	90	81
Keyano College	76	93	88	72
Lakeland College	63	76	72	61
Lethbridge Community College	75	96	94	73
Medicine Hat College	81	96	94	79
Mount Royal College	85	96	94	81
Olds College	62	92	85	59
Red Deer College	85	98	95	83
Total	***82***	***95***	***91***	***78***
Public Colleges since 1997				
Bow Valley College	33	66	45	21
NorQuest College	28	65	36	20
Northern Lakes College	22	71	39	14
Portage College	37	88	52	25
Public Colleges since 1997 Total	***30***	***70***	***42***	***20***
Public Colleges Total	**75**	**92**	**85**	**71**
Private Colleges				
Alberta College	40	57	43	25
Canadian Nazarene College	100	100	100	100
North American Baptist College	98	100	98	96
St. Mary's College	91	100	98	91
Private Colleges Total	**53**	**68**	**56**	**42**
Technical Institutes				
NAIT	89	96	90	83
SAIT	83	94	87	75
Technical Institutes Total	**86**	**95**	**88**	**79**
TOTAL	**85**	**95**	**90**	**81**

Jurisdictional and Geographical Origin of New Post-Secondary Students

One of the significant challenges faced by the post-secondary education system in Alberta revolves around making education accessible to students from all areas of the province. In fact, this is the vision of the Campus Alberta initiative, whereby a network of providers will collaborate to deliver learning to Albertans where and when people need it. Currently, regions vary in the percentage of their students who enroll directly in the post-secondary learning system. While it is important to note that there are many reasons for these variations, and caution is to be exercised in drawing conclusions about jurisdictions having small populations, we can nevertheless note some general patterns that emerge from examining jurisdictional differences.

Table 13, Figure 3 and Figure 4 present data on the jurisdictional origin of graduates for students in public, separate and Francophone authorities — no private, federal, charter, or provincial authorities are included. This table only includes students who graduated in 1999. While the north and central regions of the province send approximately the same proportion of graduates to the post-secondary system (34 to 35 percent), and the southern region a slightly higher proportion (37%), both the capital region and the Calgary region send, proportionately, a greater share of their graduates onto post-secondary. The Calgary public and separate regions together sent 41% of their graduates onto post-secondary, slightly less than the Edmonton region jurisdictions (43%). The last three rows of Table 13 also contain a comparison of the Francophone, Catholic, and non-Catholic jurisdictions. The data reveal that Catholic school jurisdictions in Alberta send a significantly larger proportion of their graduates onto post-secondary studies than non-Catholic jurisdictions. There are a myriad of reasons for this difference, and while this report does not speculate on these reasons,[23] the disparity is noteworthy.

Within each of the areas of the province, noteworthy differences emerge. In northern Alberta, the percent of graduates enrolled in post-secondary ranges from 23% in the Pembina Hills Regional Division to 45% in the Grande Prairie Roman Catholic Separate School District. Among central Alberta jurisdictions, the Greater North Central Francophone Education Region (46%) and Buffalo Trail Regional Division (44%) send the largest number of graduates, proportionally, onto post-secondary, while Living Waters Catholic Regional Division (26%), East Central Alberta Catholic Separate Schools Regional Division (27%), and Parkland School Division (27%) send the fewest. The range is greatest in the southern region of the province, where Canadian Rockies sent 22% of its graduates onto post-secondary, compared with more than half of graduates (54%) from the Holy Spirit Roman Catholic Separate Regional Division.

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[23] One useful avenue worth exploring is to examine differences in mobility patterns of students in the public vs. the separate system, which except for the two jurisdictions in St. Albert, equate with the non-Catholic and Catholic jurisdictions, respectively. For the possible role played by school mobility in contributing to post-secondary attendance differences between jurisdiction types, please see, "Student mobility in Alberta," April, 2000, unpublished paper, Information Services, Alberta Learning.

Table 13
Grade 12 Graduates Attending Post-Secondary Institutions by Jurisdiction[24]

Jurisdiction	Total Graduates	Total Attending	Percent of Graduates Attending
Northern Alberta			
Aspen View Regional Division	160	63	39
East Central Francophone Education Region	--	--	--
Evergreen Catholic Separate Regional Division	114	39	34
Fort McMurray Roman Catholic Separate School District	190	73	38
Fort McMurray School District	241	100	41
Fort Vermillion School Division No. 2833	140	44	31
Grande Prairie Roman Catholic Separate School District	117	53	45
Grande Prairie School District	307	110	36
High Prairie School Division	175	63	36
Holy Family Catholic Regional Division	86	38	44
Lakeland Roman Catholic Separate School District	75	24	32
Northern Gateway Regional Division	272	87	32
Northern Lights School Division	318	107	34
Northland School Division	--	--	--
Northwest Francophone Education Region	19	8	42
Peace River School Division	196	60	31
Peace Wapiti Regional Division	256	113	44
Pembina Hills Regional Division	638	145	23
Northern Alberta Total	**3304**	**1127**	**34**
Central Alberta			
Battle River Regional Division	503	198	39
Black Gold Regional Division	621	182	29
Buffalo Trail Regional Division	301	132	44
Chinook's Edge School Division	532	178	33
Clearview School Division	203	74	36
East Central Alberta Catholic Separate Schools Regional Division	97	26	27
Elk Island Catholic Separate Regional Division	279	106	38
Elk Island Public Schools Regional Division	1082	404	37
Grande Yellowhead Regional Division	380	121	32
Living Waters Catholic Regional Division	46	12	26
Greater North Central Francophone Education Region	28	13	46
Parkland School Division	587	159	27
Red Deer Catholic Regional Division	242	103	43
Red Deer School District	532	199	37
St. Paul Education Regional Division	193	78	40
St. Thomas Aquinas Roman Catholic Separate Regional Division	54	16	30
Sturgeon School Division	273	81	30
Wetaskiwin Regional Division	275	89	32
Wild Rose School Division	311	103	33
Wolf Creek School Division	408	137	34
Central Alberta Total	**6947**	**2411**	**35**

[24] These figures represent only those graduates proceeding from grade 12 in 1998/1999 in Alberta's K-12 system to Alberta's post-secondary education system in September 1999. Jurisdictions only include public, separate, and Francophone authorities. Thus, the figure of 11,004 "total attenders" on the following page represents only graduates from these jurisdictions, versus the 13,740 "total attending" students from Figure 2.

Table 13 continued

Jurisdiction	Total Graduates	Total Attending	Percent of Graduates Attending
Edmonton Area			
Edmonton Catholic Regional Division	1737	749	43
Edmonton School District	3991	1740	44
Greater St. Albert Catholic Regional Division	425	169	40
St. Albert Protestant Separate School District	488	169	35
Edmonton Area Total	**6641**	**2827**	**43**
Southern Alberta			
Canadian Rockies Regional Division	120	26	22
Christ the Redeemer Catholic Separate Regional Division	55	20	36
Foothills School Division	416	129	31
Golden Hills Regional Division	311	111	36
Grasslands Regional Division	212	81	38
Holy Spirit Roman Catholic Separate Regional Division	183	98	54
Horizon School Division	164	63	38
Lethbridge School District	471	187	40
Livingstone Range School Division	259	85	33
Medicine Hat Catholic Separate Regional Division	115	49	43
Medicine Hat School District	367	125	34
Palliser Regional Division	249	104	42
Prairie Land Regional Division	116	57	49
Prairie Rose Regional Division	203	86	42
Rocky View School Division	764	281	37
Westwind School Division	240	74	31
Southern Alberta Total	**4245**	**1576**	**37**
Calgary			
Calgary Roman Catholic Separate School District	2089	937	45
Calgary School District	5411	2126	39
Calgary Total	**7500**	**3063**	**41**
TOTAL	**28637**	**11004**	**38**
Francophone Jurisdictions	**47**	**21**	**45**
Catholic Jurisdictions	**5904**	**2512**	**43**
Non-Catholic Jurisdictions	**22686**	**8471**	**37**

-- Percentages based on numbers less than 6 have been suppressed to protect the privacy of individuals. Totals exclude suppressed values.

Figure 3
Percentage of Grade 12 Graduates Attending Post-Secondary Institutions
By Public School Jurisdiction

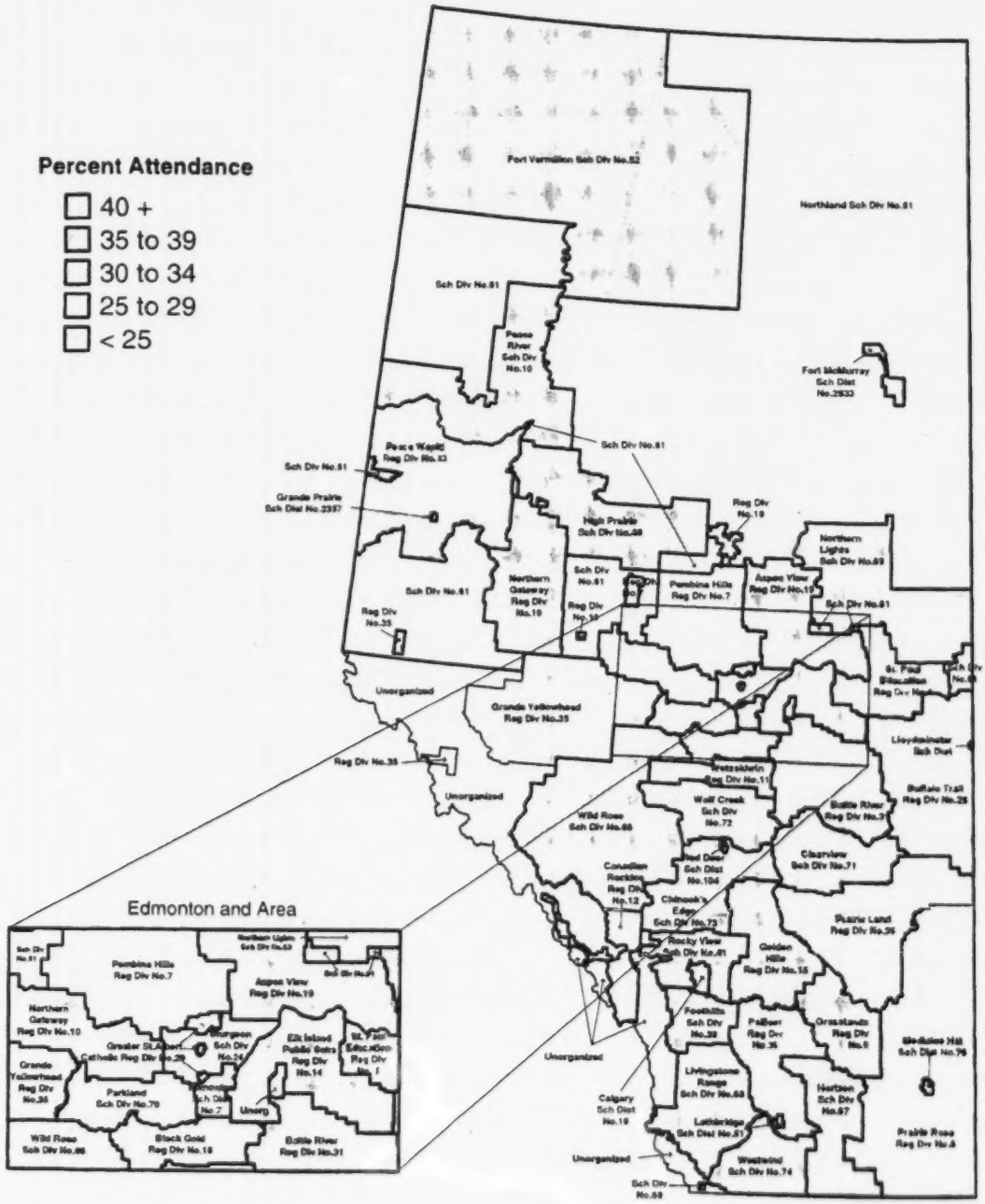
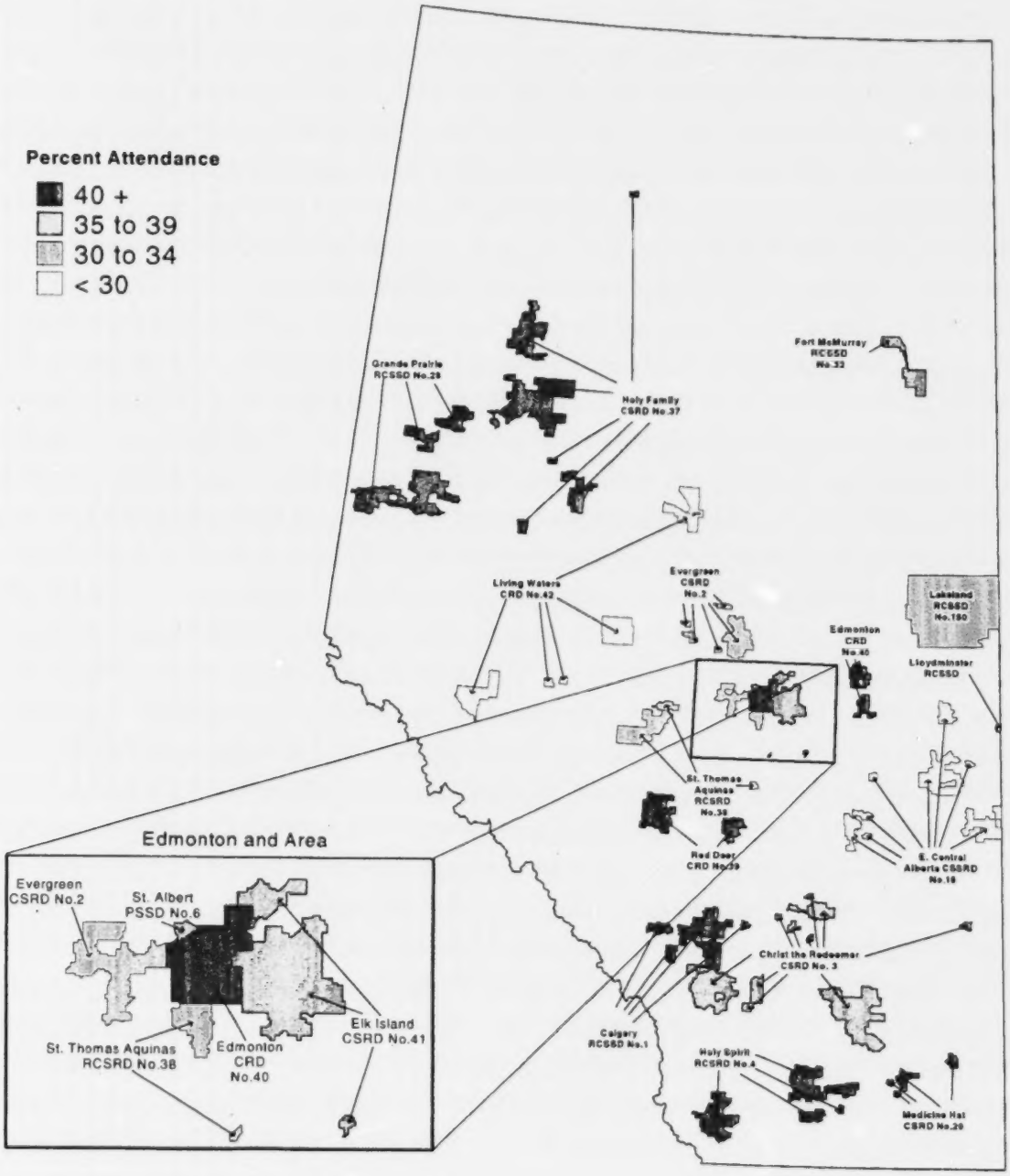


Figure 4
Percentage of Grade 12 Graduates Attending Post-Secondary Institutions by Separate School Jurisdiction



A different picture emerges when examining Table 14, which presents the percentage of grade 12 graduates attending post-secondary institutions, by sector and census division. School jurisdiction boundaries do not map to census division (CD) boundaries, so these data serve as a useful complement to the data presented in Table 13. For graduates attending all post-secondary institutions, CD No. 4 (Hanna – 45%) has the highest percentage of graduates attending post-secondary. Conversely, less than 30% of graduates from CD No. 14 (Hinton) and CD No. 15 (Banff) were attending post-secondary directly from high school in 1999.

Interesting differences are also apparent if we examine the type of post-secondary institution attended. Both CD No. 6 (Calgary – 24%) and CD No. 2 (Lethbridge – 21%) have more than 20% of students attending universities, while CD No. 17 (Slave Lake – 5%) and CD No. 1 (Medicine Hat – 4%) have five percent or fewer of their graduates attending university. Conversly, While one-third of graduates from CD No. 4 (Hanna), CD No. 1 (Medicine Hat), and CD No. 19 (Grande Prairie) are attending a college or technical institute, only 12% of graduates from CD No. 15 (Banff) are attending non-university post-secondary institutes. In summary, broad patterns emerge indicating greater university attendance in the metropolitan areas, greater overall attendance in the south, and greater college and technical school attendance in the north.[25]

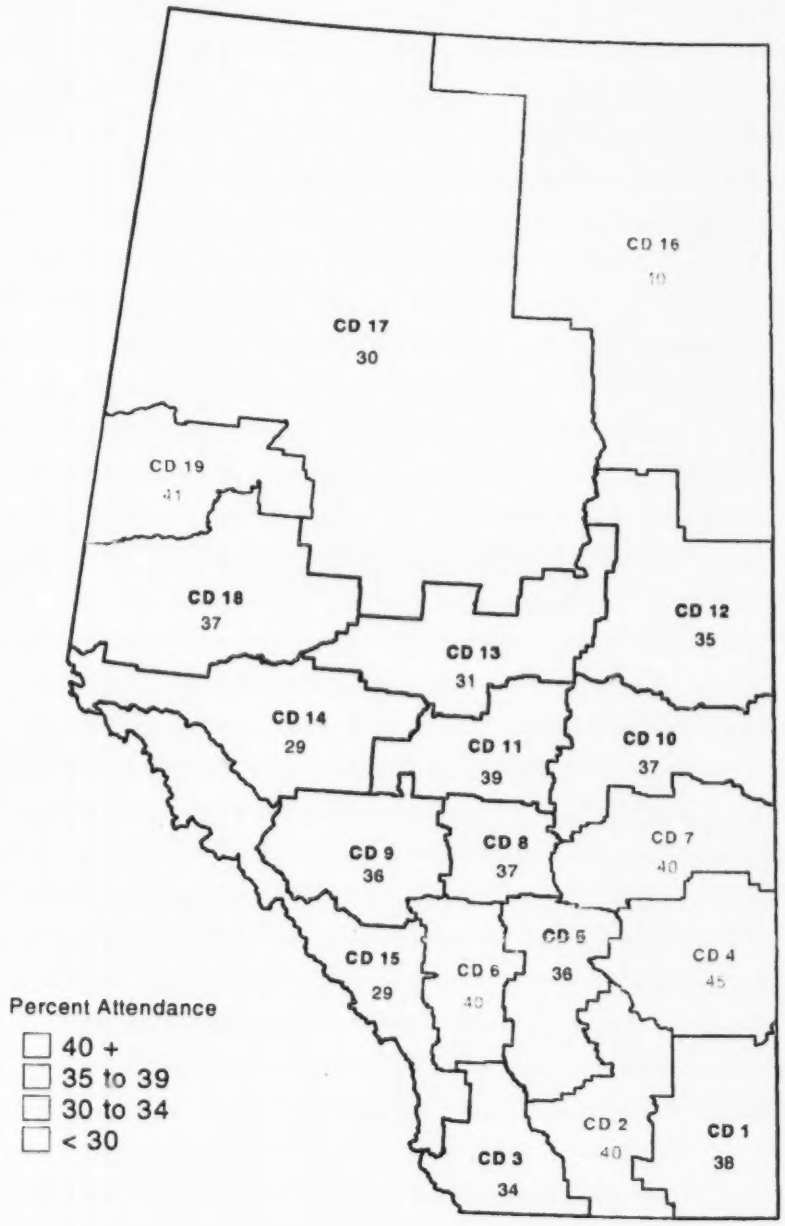
[25] Direct comparisons relating "geography" to "institution" are to be made with caution. Alberta's post-secondary learning environment is becoming much more accessible in the sense that geographic location of students is not the barrier it once was to post-secondary attendance. The 29 "institutions" discussed in this report actually comprise nearly 400 distinct campuses across the province, and some institutions host campuses far from their educational "headquarters" (i.e. the University of Lethbridge has campuses in Lethbridge, Edmonton and Calgary).

Table 14
Grade 12 Graduates[26] Attending Post-Secondary Institutions by Census Division

Census Division	Total Graduates	% Attending All Post-Secondary Institutions	% Attending Universities	% Attending Colleges / Technical
1 — Medicine Hat	641	38	4	34
2 — Lethbridge	1268	40	21	19
3 — Pincher Creek	373	34	19	16
4 — Hanna	135	45	13	33
5 — Drumheller	406	36	14	22
6 — Calgary	9095	40	24	16
7 — Stettler	493	40	11	29
8 — Red Deer	1444	37	6	30
9 — Rocky Mountain House	186	36	9	27
10 — Camrose	772	37	12	25
11 — Edmonton	10056	39	20	19
12 — St. Paul	568	35	10	25
13 — Whitecourt	650	31	11	20
14 — Hinton	313	29	14	15
15 — Banff	234	29	16	12
16 — Fort McMurray	414	40	8	32
17 — Slave Lake	423	30	5	25
18 — Grande Cache	131	37	8	29
19 — Grande Prairie	886	41	6	35
TOTAL	**28488**	**39**	**18**	**20**

[26] Only students living in Alberta and who have reported a valid postal code are included. Approximately 0.6% of graduates reported an invalid postal code.

Figure 5
Percentage of Grade 12 Graduates Attending Post-Secondary Institutions by Census Division



DELAYED ENTRY STUDENTS FROM 1997/1998

While a significant majority of Alberta high school students will enter post-secondary institutions immediately after completing high school, a sizable minority will delay entry into the post-secondary system for one or more years after leaving high school. This section focuses on 1997/1998 grade 12 students who entered the post-secondary system on a delayed basis in the fall of 1999. This is especially important since existing sources of administrative data are unable to partition specific student cohorts. It is not until the Alberta Student Number project is fully implemented that we will be able to accurately track different student cohorts.

As noted from the above description of transition patterns, analyzing delayed entry students is a more complicated process than analyzing students proceeding to post-secondary directly from high school, and there are several possible avenues that can be pursued. Figure 6 diagrams the cohort flow of the grade 12 student group, and the particular groups of students who were excluded from our analysis. The original 1997/1998 grade 12 cohort consisted of 53,887 students. Of these, 17,364 (32%) had applied to post-secondary in September 1998, leaving 36,523 students who had never attempted entry into post-secondary and could potentially have entered a post secondary institution in September of 1999. Of this number:

- 12,182 were repeat grade 12 students in 1998/1999 and were thus part of the 1998 cohort sent to ACAT; and
- 940 had last attended a post-secondary institution as opposed to a high school.[27]

Both of these student pools were removed from the population, leaving 23,401 available for matching. Of these students, 2,942 students made 3,474 applications to post-secondary institutions in September of 1999.

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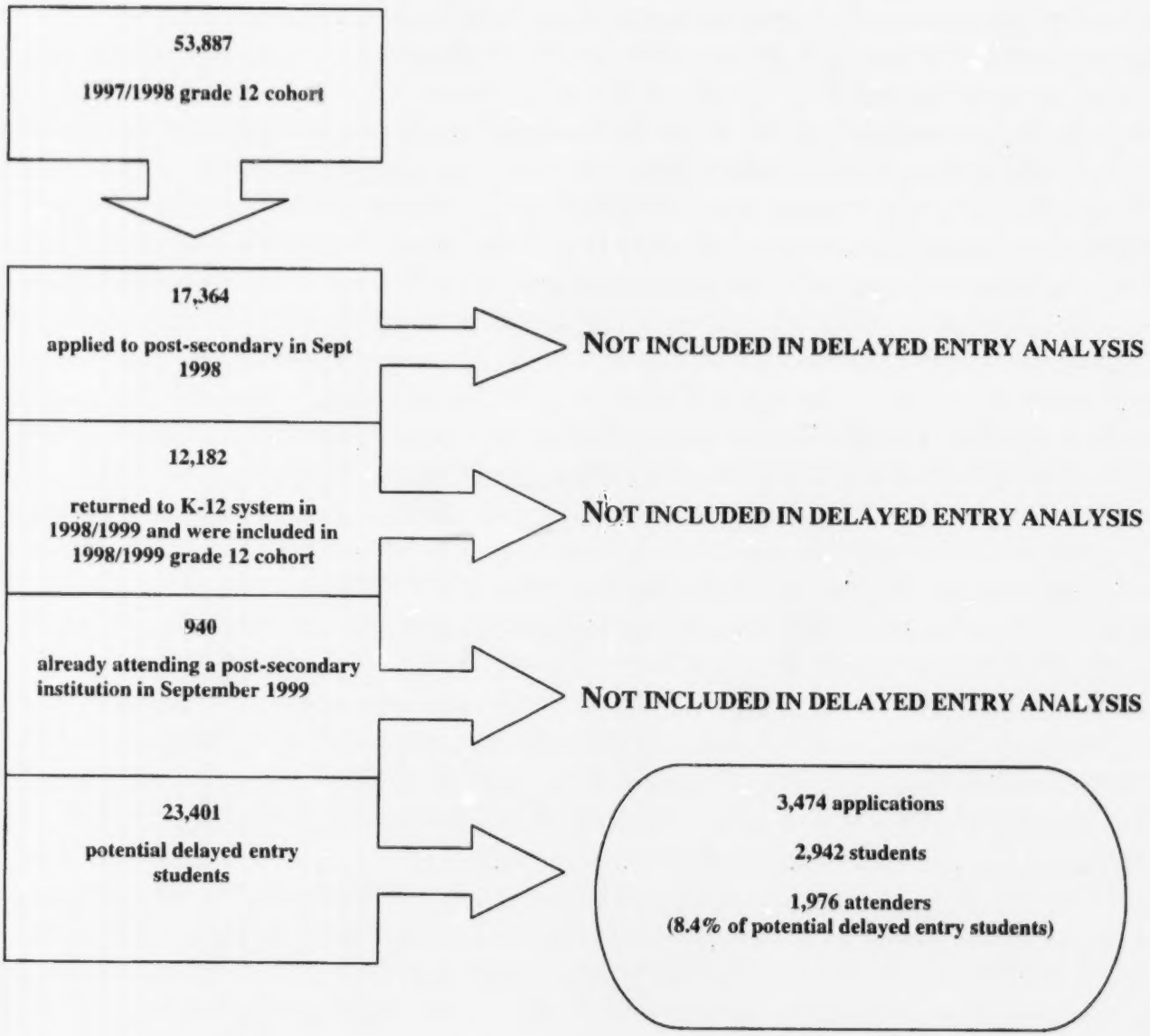
[27] The data files sent to ACAT by the institutions contained a field designating whether the applicant's last educational institution attended was a high school or a post-secondary institution. Since the 940 applicants coded as 'post-secondary' as opposed to 'high-school' are not considered to be a part of the grade 12 student cohort, they were excluded from the analysis.

Figure 6
Flow of 1997/1998 Alberta Learning Grade 12 Cohort, Delayed Entry

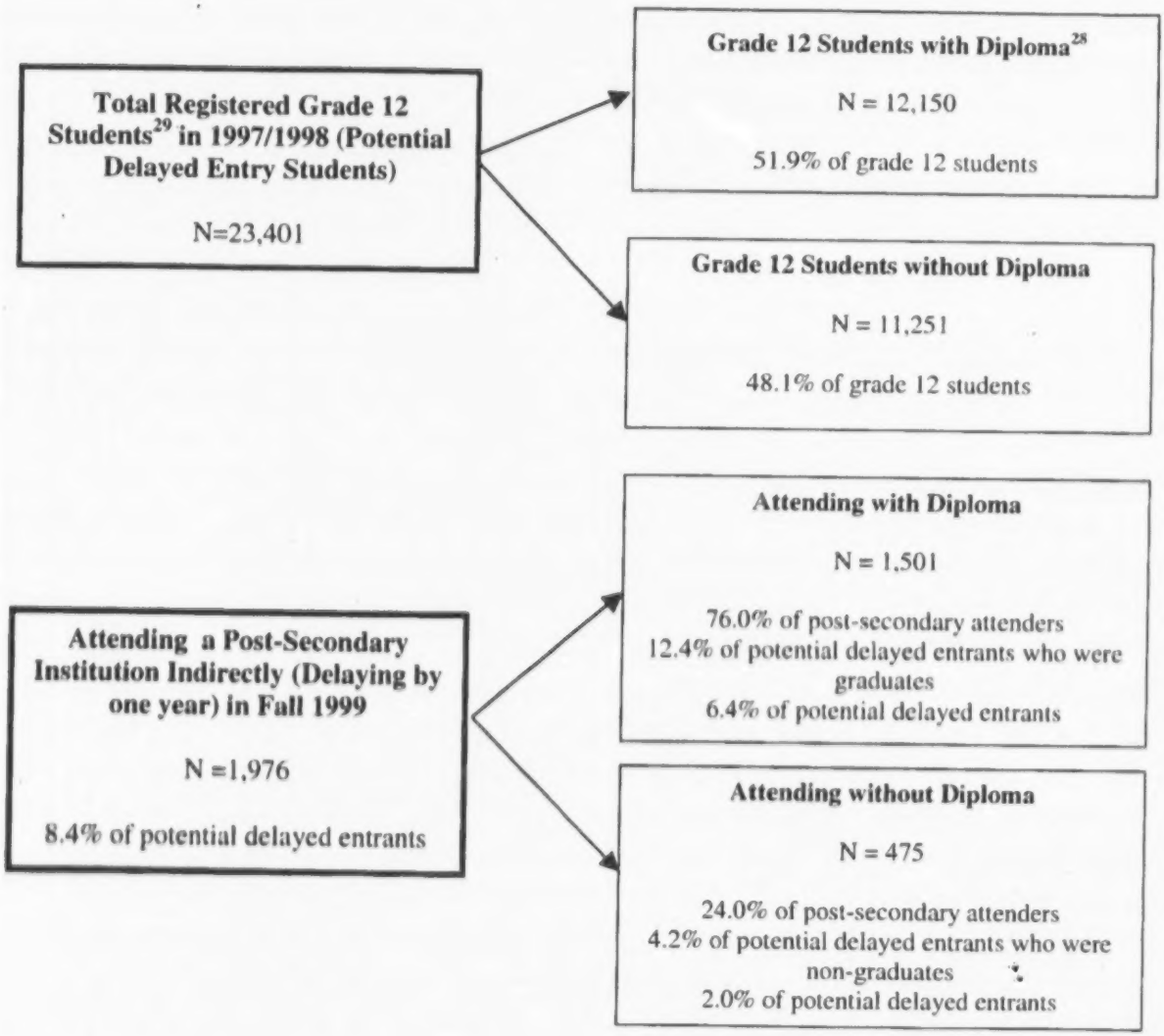

53,887
1997/1998 grade 12 cohort
17,364
applied to post-secondary in Sept 1998
NOT INCLUDED IN DELAYED ENTRY ANALYSIS
12,182
returned to K-12 system in 1998/1999 and were included in 1998/1999 grade 12 cohort
NOT INCLUDED IN DELAYED ENTRY ANALYSIS
940
already attending a post-secondary institution in September 1999
NOT INCLUDED IN DELAYED ENTRY ANALYSIS
23,401
potential delayed entry students
3,474 applications
2,942 students
1,976 attenders
(8.4% of potential delayed entry students)

As shown in Figure 7, 1,976 of these 2,942 students were attending a post-secondary institution, representing 8.4% of the delayed entry pool of 23,401 students. If these students are compared against the original 1997/1998 grade 12 cohort of 44,545 students (after exclusions), then 4.4% of 1997/1998 Alberta grade 12 students entered post-secondary institutions after leaving the Alberta education system for one year.

Comparing the delayed entry Figure 7 with Figure 2 reveals that grade 12 students who eventually delay their entry into the post-secondary system are distinct in some characteristics. Fewer students who delayed entry had received a diploma (52%) as compared to those not delaying entry (67%). In addition, while 38% of all 1998/1999 graduates (Figure 2) continued into post-secondary directly after high school, only 12.4% of delayed entry graduates (Figure 7) entered a post-secondary institution in 1999. And while more than one in ten (13.7%) direct post-secondary entrants had not received a diploma (Figure 2), one in four (24.0%) of post-secondary attenders delaying entry until 1999 had not graduated.

It is also interesting to compare the application rate, as well as the rate of attendance of the 1997/1998 delayed entry cohort versus their direct entry counterparts. In tems of the percent of students applying, 12.6% of 1997/1998 students eligible to apply to post-secondary on a delayed basis in September, 1999 had actually applied. More than three times as many students (39.0%) in this cohort, proportionally, applied directly to post-secondary in September, 1998. In terms of the percent of students who applied and were attending, however, the rates are similar for the two cohorts: 67.2% of those applying on a delayed basis were attending, compared with a 71.6% attendance rate for those students from the same cohort applying directly.

Figure 7
Graduation Status and Post-Secondary Education Status of 1997/1998 Alberta Grade 12 Students, Delayed Entry


Total Registered Grade 12 Students[29] in 1997/1998 (Potential Delayed Entry Students)
N=23,401
Grade 12 Students with Diploma[28]
N = 12,150
51.9% of grade 12 students
Grade 12 Students without Diploma
N = 11,251
48.1% of grade 12 students
Attending a Post-Secondary Institution Indirectly (Delaying by one year) in Fall 1999
N =1,976
8.4% of potential delayed entrants
Attending with Diploma
N = 1,501
76.0% of post-secondary attenders
12.4% of potential delayed entrants who were graduates
6.4% of potential delayed entrants
Attending without Diploma
N = 475
24.0% of post-secondary attenders
4.2% of potential delayed entrants who were non-graduates
2.0% of potential delayed entrants

[28] Includes students receiving an Alberta High School Diploma or a High School Equivalency Diploma.

[29] Includes all students registered in grade 12 in an Alberta school in the 1997/1998 school year (53,887), minus those who proceeded directly into post-secondary in September 1998 (17,364), minus all students who registered in the K-12 system again in the 1998/1999 school year and who were included in the 1999 cohort sent to ACAT (12,182). Those students whose last institution attended was a post-secondary institution (940) were also excluded.

CHARACTERISTICS OF POST-SECONDARY STUDENTS DELAYING ENTRY

Table 15, Table 16, and Table 17 make it apparent that grade 12 students who delayed entry into post-secondary for one year are distinctive in several ways compared with students who proceeded directly from high school. Table 15 indicates that many more students who delayed entry were without a diploma compared with their direct entry counterparts. Among university entrants, for example, only 7% of students proceeding directly from grade 12 in 1998 were without a diploma, compared with 17% for those who delayed entry until 1999. The pattern was similar for the other sectors, though the differences are not as notable. At Bow Valley College, NorQuest College, and Alberta College, more than half of delayed entry students in 1999 were without a diploma.

Given the lower proportion of graduates among the delayed entry pool, it is not surprising to find that these students also had fewer credits, on average, than their counterparts proceeding directly from high school. Table 16 indicates that delayed entry students had slightly fewer credits than students proceeding directly into post-secondary. The largest difference was for university entrants — students proceeding directly into post-secondary had an average of 119 credits, compared with 115 credits for delayed entry students. The exception to this pattern was for the former vocational colleges, whose delayed entry students had *more* credits, on average, than those proceeding directly into the post-secondary system.

While the reasons that students delay the beginning of their post-secondary career are, as mentioned, varied, the data presented here points to lower academic standing as being one possible factor. Table 17 presents comparative course averages for direct and delayed entry students. Generally, students who had delayed entry until 1999 had lower averages than students who proceeded directly. Overall, students who had delayed entry until 1999 had a grade 12 average of 67.8%, compared with an average of 72% for students entering directly in 1998. The difference was greatest in the university sector (74.3% for delayed entry students vs. 76.8% for direct entrants).[10] The same pattern holds for Mathematics 30 and Language Arts 30, with the variance greatest for Mathematics 30.

[10] The private colleges cannot be compared, since three of the four colleges are new to the analysis this year.

Table 15
Percent Without Diplomas of 1997/1998 and 1998/1999 Grade 12 Students Attending Post-Secondary Institutions, by Entry Status[31]

	% Without Diplomas		
Institution	**1997/1998 Direct Entry in 1998[32]**	**1997/1998 Delayed Entry in 1999**	**1998/1999 Direct Entry in 1999[33]**
Universities			
Athabasca University	53	--	31
University of Alberta	6	15	8
University of Calgary	5	22	4
University of Lethbridge	3	12	4
Universities Total	**7**	**17**	**7**
Private University Colleges			
Augustana University College	5	--	6
Canadian University College	--	--	18
Concordia University College of Alberta	16	--	16
The King's University College	12	--	15
Private University Colleges Total	**11**	**--**	**12**
Public Colleges			
Alberta College of Art and Design	--	--	6
Fairview College	28	--	37
Grande Prairie Regional College	11	16	15
Grant MacEwan Community College	11	16	15
Keyano College	15	33	21
Lakeland College	25	19	30
Lethbridge Community College	17	19	14
Medicine Hat College	10	18	13
Mount Royal College	13	16	13
Olds College	23	19	23
Red Deer College	10	15	8
Total	***13***	***17***	***14***
Public Colleges since 1997			
Bow Valley College	63	67	70
NorQuest College	79	67	67
Northern Lakes College	71	--	81
Portage College	32	--	66
Public Colleges since 1997 Total	***70***	***67***	***70***
Private Colleges			
Alberta College	n/a	75	72
Canadian Nazarene College	n/a	--	--
North American Baptist College	--	0	5
St. Mary's College	n/a	--	4
Private Colleges Total	--	**69**	**56**

[31] Includes students coded as attending more than one institution.
[32] Percentages in this column are from Table 1 of the 1997/1998 Transitions report.
[33] Percentages in this column are from Table 9 of the current report.

Table 15 continued

Technical Institutes			
NAIT	13	17	13
SAIT	15	16	18
Technical Institutes Total	**14**	**16**	**16**
TOTAL	**12**	**24**	**15**

-- Percentages based on numbers less than 6 have been suppressed to protect the privacy of individuals. Totals exclude suppressed values.

Table 16
Average Number of High School Credits of 1997/1998 and 1998/1999 Grade 12 Students Attending Post-Secondary Institutions, by Entry Status

Institution	Average Number of Credits		
	1997/1998 Direct Entry in 1998[34]	1997/1998 Delayed Entry in 1999	1998/1999 Direct Entry in 1999[35]
Universities			
Athabasca University	87	102	108
University of Alberta	119	120	122
University of Calgary	120	114	120
University of Lethbridge	117	112	119
Universities Average	**119**	**115**	**120**
Private University Colleges			
Augustana University College	116	111	114
Canadian University College	111	120	116
Concordia University College of Alberta	112	114	114
The King's University College	113	112	114
Private University Colleges Average	**114**	**113**	**114**
Public Colleges			
Alberta College of Art and Design	115	115	114
Fairview College	99	98	96
Grande Prairie Regional College	109	107	108
Grant MacEwan Community College	112	112	112
Keyano College	110	99	109
Lakeland College	94	108	108
Lethbridge Community College	106	106	110
Medicine Hat College	109	105	109
Mount Royal College	110	106	111
Olds College	104	105	106
Red Deer College	113	110	115
Average	***110***	***108***	***111***
Public Colleges since 1997			
Bow Valley College	72	74	77
NorQuest College	63	80	74
Northern Lakes College	80	76	68
Portage College	102	79	80
Public Colleges since 1997 Average	***70***	***77***	***75***
Private Colleges			
Alberta College	n/a	82	77
Canadian Nazarene College	n/a	--	121
North American Baptist College	113	113	117
St. Mary's College	n/a	123	118
Private Colleges Average	**113**	**88**	**87**

[34] Percentages in this column are from Table 11 of the 1997/1998 Transitions report.
[35] Percentages in this column are from Table 10 of the current report.

Table 16 continued

Technical Institutes			
NAIT	109	109	111
SAIT	107	106	107
Technical Institutes Average	**108**	**108**	**109**
AVERAGE	**112**	**105**	**112**

-- Number of credits based on numbers less than 6 have been suppressed to protect the privacy of individuals. Totals exclude suppressed values.

Table 17
Average in All Grade 12 Courses, Mathematics 30 and Language Arts 30 of 1997/1998 Grade 12 Students Attending Post-Secondary Institutions, by Entry Status

	All Courses		Mathematics 30		Language Arts 30	
Institution	**Direct Entry in 1998[36]**	**Delayed Entry in 1999**	**Direct Entry in 1998**	**Delayed Entry in 1999**	**Direct Entry in 1998**	**Delayed Entry in 1999**
Universities						
Athabasca University	64.6	69.5	63.6	60.4	64.1	67.6
University of Alberta	77.0	74.8	77.4	72.7	74.9	74.8
University of Calgary	77.5	74.9	78.0	74.2	74.3	74.1
University of Leth	75.1	73.3	71.9	69.3	73.8	72.8
Universities Average	**76.8**	**74.3**	**77.2**	**72.3**	**74.4**	**73.8**
Private University Colleges						
Augustana Univ College	69.3	66.1	65.5	60.3	68.6	63.9
Canadian Univ College	73.5	64.0	65.4	--	71.4	66.0
Concordia Univ College	66.7	67.5	63.7	62.4	65.2	61.8
The King's Univ Col	71.6	66.4	66.3	66.3	71.5	65.6
Private Univ Coll Avg	**68.8**	**66.7**	**64.8**	**62.5**	**67.7**	**63.2**
Public Colleges						
AB Coll of Art & Des	72.3	70.1	66.2	57.1	71.2	67.4
Fairview College	65.4	62.2	57.9	58.8	62.9	62.5
Gr Prairie Reg Coll	69.6	66.1	68.8	62.7	69.5	62.6
Grant MacEwan Coll	70.0	68.8	68.7	64.9	69.2	68.0
Keyano College	69.2	65.6	64.8	64.7	69.8	64.8
Lakeland College	67.1	69.6	66.9	66.4	65.4	65.3
Lethbridge Com Coll	67.4	66.9	63.0	62.1	64.2	64.6
Medicine Hat College	69.8	66.6	68.2	64.4	66.7	65.3
Mount Royal College	67.1	66.7	62.8	63.6	65.4	66.3
Olds College	67.3	66.1	64.6	62.9	66.7	64.5
Red Deer College	69.5	68.3	66.6	66.3	67.7	65.7
Average	**68.7**	**67.5**	**66.1**	**64.1**	**67.3**	**66.2**
Public Colleges since 1997						
Bow Valley College	64.4	63.0	63.8	54.9	61.3	63.1
Norquest College	63.8	61.1	64.8	49.0	64.6	58.8
North Lakes College	60.6	65.6	52.6	--	59.8	73.0
Portage College	66.2	58.9	--	59.0	64.9	76.5
Pub Coll since 97 Avg	***63.6***	***62.1***	***61.9***	***52.5***	***62.4***	***61.9***
Private Colleges						
Alberta College	n/a	62.1	n/a	60.9	n/a	63.4
Canadian Nazarene Coll	n/a	--	n/a	--	n/a	--
N Amer Baptist College	72.8	69.0	70.8	58.8	71.4	69.7
St. Mary's College	n/a	74.3	n/a	76.8	n/a	72.8
Private Colleges Avg	**72.8**	**63.9**	**70.8**	**65.5**	**71.4**	**67.0**

[36] Percentages in the "Direct Entry in 1998" columns are from Table 12 of the 1997/1998 Transitions report.

Table 17 continued

Technical Institutes						
NAIT	67.3	65.9	65.2	63.4	64.9	64.2
SAIT	66.4	66.5	63.4	62.4	63.4	63.4
Tech Institutes Avg	**66.9**	**66.2**	**64.4**	**62.8**	**64.2**	**63.8**
AVERAGE	**72.0**	**67.8**	**72.4**	**66.0**	**70.6**	**67.3**

-- Percentages based on numbers less than 6 have been suppressed to protect the privacy of individuals. Totals exclude suppressed values.

METHODOLOGICAL NOTES

BACKGROUND

To investigate students' secondary to post-secondary transitions, Alberta Learning and the Alberta Council on Admissions and Transfer (ACAT) initiated a data-sharing project in which secondary level student data is linked to post-secondary level student data. In February 1992, ACAT initiated the Duplicate Application Detection (DAD) Project in conjunction with 26 post-secondary institutions. The project has enabled the ACAT Office to compare selected elements of new student application files from pairs of institutions to determine the extent of duplicate applications between institutions. The DAD project resulted in the development of a database containing application data for individuals applying to Alberta's public post-secondary institutions for September admission. A collaboration with ACAT and Alberta Learning to pilot an exploratory project using the DAD database to generate information on post-secondary application activity of high school students began in 1995. This report is modeled substantially after last year's report titled *Post-Secondary Transitions in Alberta: Educational Outcomes of 1997/1998 Grade 12 Students.*

THE DATA EXCHANGE

Alberta's publicly funded post-secondary institutions, as well as four private institutions, participated in the Duplicate Application Detection (DAD) project for 1998/1999.[37] The basis of the data exchange process is the DAD record identifier, a 12 character identification number derived from the eight digits of the student's birth date and the first four characters of the surname in the sequence 'YYYYMMDDSURN.' It was known from the beginning that the DAD record identifier would be a *non-unique* identifier.[38] In particular, it will not capture unrelated individuals with the same birth date and similar surnames (e.g., Pierre Michaud and Jennifer Michaels, both having the same birth date), or multiple births such as twins or triplets. In the current project, Alberta Learning was able to generate non-duplicate DAD record identifiers for over 95 percent of cases. To maximize data integrity, only unique records (57,303) were provided to ACAT for record matching.

As well as the DAD record identifier, Alberta Learning included the following fields in the file sent to ACAT:

- school code;
- postal code;

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[37] The participating institutions included 29 institutions: all of Alberta's universities (4); public colleges (15); private university colleges (4); and technical institutes (2). In addition, four private colleges, including Alberta College, Canadian Nazarene College, North American Baptist College, and St. Mary's College, participated.

[38] Perhaps the best statement describing how the DAD identifier should be viewed is by Andrew Barnard (p. 1), in a pioneering evaluation study of the DAD database: "...the use of a student identifier..., though not guaranteed to be unique to each applicant, offers a high enough probability of uniqueness to enable statistical measures of applicant behaviours *as though we were tracking individuals.*" (emphasis in original). [Andrew A. Barnard. 1995. *A description and analysis of the Duplicate Application Detection (DAD) database for the years 1992, 1993 and 1994.* Edmonton: ACAT/Andrew Barnard Consulting].

- school year (1999 for all records, representing the 1998/1999 school year); and
- graduation status as of Dec 31, 1999.

For all DAD record identifiers for which ACAT was able to obtain a unique match (19,897 DAD record identifiers, representing 25,080 applications[39]), it sent Alberta Learning the following information:

- postal code;
- the post-secondary institution applied to;
- the program applied to;
- whether the applicant was deemed qualified for the program (universities only);
- whether the applicant was offered admission to the program;
- whether the applicant was attending the institution; and
- whether the applicant's last educational institution attended was a high school or a post-secondary institution.

EVALUATING THE DATA

A process of data exchange of this nature is subject to compromises of data quality. First, given the choice of using DAD record identifiers, there is no sure way to ascertain whether any "match" between Alberta Learning and ACAT refers to the same person. For example, if the DAD identifier of 19780726MICH generated from AL data for Pierre Michaud is found in ACAT's database, it is not clear whether this ID refers to this individual or some other (perhaps Jennifer Michaels, also born on July 26, 1978).

However, for a subset of the data, we used other departmental data containing both the student's first name and last name as well as birth date, and found that very few (less than 1%) of our matches for this subset of data were "bad" matches. These bad matches represented students with the same birth dates but different surnames, even though they shared the first four letters of the surname.

In sum, through the efforts of the data validity checks, we estimate that over 95% of the distinct DAD record identifiers in our file (19,897) are valid matches. Bad matches may result in an overestimate of post-secondary continuance, since all of the grade 12 students in our file who did continue will match to ACAT data, *but* some students who did not really go on will match to DAD record identifiers generated by other students (mainly applicants from out of province). It must be remembered, however, that in preparing its file for this study, Alberta Learning eliminated records which generated duplicate DAD identifiers, therefore slightly underestimating how many grade 12 students actually continued to post-secondary institutions.

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[39] It is important to remember that in this report, the unit of analysis is the *application*, and not the *student*. One student (represented by one DAD record identifier) may apply to more than one post-secondary institution, which will generate multiple applications. Multiple applications by the same student is an issue that complicates the admission process and potentially affects our understanding of access at Alberta's post-secondary institutions.

Once the preliminary checks on match validity were complete, the file was examined for internal consistency. After identifying inconsistencies, the data were cleaned before beginning the analysis.

In addition, while the ACAT data set used in this report is comprehensive, there are some omissions that need to be mentioned. Together, these omissions suggest that the post-secondary participation rates should be viewed as conservative estimates.

First, although the data set of grade 12 students is based on the entire population the post-secondary application, offers and admission rates exclude apprenticeship programs.[40] Second, the database excludes grade 12 students who have gone on to attend a post-secondary institution outside of Alberta. Third, the population of grade 12 students was constructed on the basis of registration in at least one grade 12 course and includes both high school diploma graduates and non-graduates (excluding non graduates who registered in the K-12 system again in the 1999/2000 school year). Including non-graduates who are not continuing their high school education in the database is necessary since some of them have been able to enter the post-secondary system. Nevertheless, the total population of interest includes students who may have dropped out of the public school system without completing high school and who are not considered traditional candidates for post-secondary attendance to the same extent as high school graduates. Fourth, the DAD database contains only September admissions to the post-secondary system, and doesn't include students who may have applied to post-secondary in the January admission cycle. Together, these data stipulations suggest that participation rates are slightly underestimated since the pool of candidates (denominator) is overestimated and the attendance at post-secondary institutions (numerator) is underestimated.

Data Issues for the 1999 ACAT Merged Data File

- **Data Issue:** Students having only the value of 'Post-secondary' in the 'Last Institution Attended' field (either on a single or multiple application) were removed from the main analysis file and from the grade 12 cohort file.
  - 2,107 records (comprising 1,864 distinct DAD record identifiers) were removed from the main analysis file (the file of 25,080 applications and 19,897 distinct students upon which the analysis in this report is based).
  - 1,864 records (and distinct DAD record identifiers) were removed from the grade 12 cohort file (the main file of 57,303 grade 12 students sent to ACAT for matching).
- **Data Issue:** Students registered in Alberta's K-12 system in both the 1998/1999 and 1999/2000 school years who also did not apply to post-secondary institutions (not matched in the ACAT file) were removed from the grade 12 cohort file.
  - 9,390 records (and distinct DAD record identifiers) were removed from the grade 12 cohort file

[40] Private vocational schools have also been omitted from the data set, which falls in line with traditional definitions of 'post-secondary' students.

THE COMPLEXITY OF THE POST-SECONDARY APPLICATION PROCESS

Application activity is a process that begins when an applicant makes an inquiry to a post-secondary institution regarding admission to a program, and may include some or all of the following: submission of a completed application form for admission to a particular program; payment of an application fee; purchase and submission of high school transcripts directly from the issuing organizations; purchase and submission of post-secondary transcripts directly from the issuing institutions; language proficiency test results if required; letters of reference; portfolio; etc. The completed application is reviewed in terms of the program admission requirements and a decision is made to offer or deny admission. A student who receives an offer of admission may then proceed to register for the program and enrol in courses. However, students may also decline to accept the offer of admission and may or may not inform the post-secondary institution of their decision not to accept the offer.

Often post-secondary institutions will post application information to their student information system as soon as an application form is received. This enables their system to begin generating appropriate correspondence and activate other management procedures, even though some fields on the application form may be incomplete and supporting documents are expected to follow. Until the form is completed and all supporting documentation and fees have been received, the application may not be deemed to be "complete." The operating assumption is that the applicant will carry through and arrange for all documentation to be sent to the post-secondary institution so that an admission decision can be made and an offer of admission (or refusal) extended to the applicant. Some institutional delegates have reported that it is not unusual for an institution's pool of applications to contain approximately one third that are either incomplete or unqualified. The total number of applications in the DAD project includes an undetermined number that were incomplete.

Business practices vary as post-secondary institutions have developed specific business procedures for managing their applications for admission. For example, there are various ways of managing "wait lists" as well as various practices for purging incomplete applications. These variables may make comparisons difficult.

In addition, the practice of multiple applications complicates the access picture. *Multiple internal applications* occur when students apply for admission to different programs at the same institution, thereby producing internal duplicate applications. The ACAT office applies a standard procedure and selects the one best occurrence of a unique record identifier at the institution and removes the remaining internal duplicates from that institution's file for the purposes of the study. *Multiple external applications* occur when students apply to programs at different institutions, resulting in multiple applications from a provincial perspective. In fall 1999, 12% of applicants to Alberta post-secondary institutions generated 23% of all applications.

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